

United States
**Census
2000**

Census 2000 Operational Plan

December 2000

**U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU**

CENSUS 2000 OPERATIONAL PLAN

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Section I.

**Objectives and
Strategies**

I. OBJECTIVES AND STRATEGIES

The census of the United States' population and housing was conducted as of April 1, 2000. Reflecting a long tradition, Census 2000 was the 22nd decennial enumeration in an unbroken chain that our nation has undertaken. From apportioning the U.S. House of Representatives to providing the data used by communities, businesses, and Americans everywhere, the decennial census is the cornerstone of our knowledge about our nation. The census is the only data-gathering operation in the United States that is mandated by the Constitution and the only one that produces a broad array of information at the smallest geographic levels.

OBJECTIVES OF CENSUS 2000

The goal of every census is to be the best census ever. So it was with Census 2000. The Census 2000 operational plan contains strategies to improve the completeness of the census that were identified using the following objectives:

- C Make unprecedented efforts to count every household and person—from simpler, user-friendly forms to the better design of census operations
- C Maintain an open process that diverse groups and interests can understand and support
- C Minimize the differential undercount of racial and ethnic groups
- C Minimize the overall net undercount
- C Avoid erroneous enumerations to the greatest extent possible
- C Achieve maximum accuracy in the most cost-effective way possible

FOUR STRATEGIES FOR FUNDAMENTAL CHANGE

The Census Bureau's operational plans for Census 2000 were built around four fundamental strategies:

- **Strategy One: Build Partnerships at Every Stage of the Process**

The Census Bureau cannot accomplish its goals alone. So for Census 2000, we reached out and formed partnerships to help us accomplish our objectives. We

needed to think in terms of every activity being done by a "best in class" provider. This meant the Census Bureau had to build:

- C **Partnerships with state, local, and tribal governments.** These governments know their local conditions and circumstances better than the Census Bureau. They helped us correct our maps and address lists, and told us where to put unaddressed questionnaires, called "Be Counted" forms, in locations where people would find them. They also alerted us to problems and advise us of opportunities to publicize Census 2000. The law now allows us to let these governments review our address lists—while maintaining confidentiality—and get their input.
- C **Partnerships with community groups.** These groups know their constituents better than either the Census Bureau or any other governmental office. The groups alerted us to the best ways to communicate with their constituents to ensure that they were included.
- C **Partnership with the U.S. Postal Service (USPS).** For Census 2000, the Census Bureau used address information provided by the USPS to enhance our comprehensive address file. The USPS also delivered census questionnaires to over 80 percent of the addresses nationwide.
- C **Partnership through privatization.** To be "world class" in every stage of the census, we awarded contracts to private sector partners, such as:

 - C **Advertising and promotion.** We used private companies to manage our efforts to promote the census more visibly and effectively.
 - C **Facilities management.** We contracted with data processing companies to manage the facilities where completed census forms were translated into computer files.

- **Strategy Two: Keep It Simple**

The simpler and easier Census 2000 is, the greater the response and the more accurate and less expensive it will be. Simplicity was the goal for every part of the process. For example:

- C **User-friendly forms.** Our modern, powerful computer systems allowed us to use forms that were easier to read and complete. Moreover, because everyone is deluged with business mail, Census 2000 questionnaires were attractive, motivating (by explaining the benefits and mandatory nature of the census), easy to understand, and simple to fill out. The Census 2000 forms stood out because

they carried a well-publicized “census” identity. Commercial design firms worked with us to simplify the forms and implement

the user-friendly features demonstrated in our testing and research to increase response.

Ⓒ **Multiple contacts.** We also learned from our testing and research that repeated contacts and reminders pay big dividends in response rates. So for Census 2000, we implemented a multiple mail contact strategy. The first contact with each address was an advance letter that alerted the recipient to the census and its benefits and offered to send a questionnaire in one of five other languages upon request. A few days later, a census questionnaire arrived, noting that “your response is required by law.” Shortly thereafter, a postcard arrived thanking those who had participated and reminding others to do so.

Ⓒ **More ways to respond.** Our first priority was to deliver a census questionnaire to each address. For the first time, however, we also placed unaddressed Be Counted questionnaires in locations such as community centers, Walk-in Questionnaire Assistance Centers, and tribal offices for people to pick up and complete if they believed they had not been counted in the census. There was a toll-free telephone number for respondents to respond on the telephone. We also mailed census forms in one of five other languages to households who requested them in response to the advance notice letter. Finally, we accommodated responses on the Internet for over 60,000 households.

Ⓒ **Other simplified procedures**

Ⓒ A new method enhanced Census 2000 efforts to find people with no usual residence at shelters, soup kitchens, and other places where they obtain services.

Ⓒ Special targeted methods improved the count for population groups and in areas that historically have had large undercounts.

• **Strategy Three: Use Technology Intelligently**

Dramatic advances in computing allowed Census 2000 to be simpler and more accurate. For example:

Ⓒ **Digital "capture" of forms.** In Census 2000, for the first time, we scanned most of the completed questionnaires directly into computers that read handwriting. The completed forms were read directly into computer files that were used later for tabulation.

- C **"Matching" software.** Sophisticated computer software allowed us to spot multiple responses from the same household. For example, if one spouse returned a regular questionnaire by mail while the other filled out a Be Counted questionnaire, we were able to determine that both records came from the same household.
- C **"Point and click" data tabulation.** Data seekers will be able to find the information they want from Census 2000. "Point and click" computing from our new American FactFinder system will allow them to select the specific information they want, instead of thumbing through census reports that may or may not have the answer they are looking for.

- **Strategy Four: Use Special Techniques to Improve Coverage**

The traditional approach to Census 2000 included many improvements to the 1990 census design. We automated many operations performed clerically in 1990, so that sources of error in manual operations were avoided. Our reengineered method of producing the address list and integrating it with the geographic database improved the quality of the files needed for controlling census operations and tabulating the results. Expansions of the marketing and promotion programs, the Telephone Questionnaire Assistance program, and enumeration support in languages other than English addressed lessons learned in the 1990 census. Furthermore, using operations such as a telephone followup and coverage improvement followup allowed us to target efforts in areas where the potential for coverage improvement was greatest. These strategies enhanced the quality of Census 2000.

EFFECTIVE MANAGEMENT TOOLS

The Census Bureau instituted several management initiatives to facilitate a more effective and efficient process for planning and implementing Census 2000. Examples include:

- C A sophisticated electronic Management Information System, with a Master Activity Schedule (MAS) component and a Cost and Progress (C&P) component, provided information for Census 2000 operations. The MAS contains planning, preparation, development, data collection, data capture, data processing, data dissemination, and evaluation activities. The MAS also provides decision- support functions, such as critical path analysis. The C&P system reports daily progress for major collection, capture and processing operations, and periodic costs for field data collection and processing activities. The system enables Census Bureau managers to monitor progress and some costs at various summary levels for collection or

tabulation geography, as appropriate, on a timely basis.

- C The Commerce Administrative Management System is a modern electronic financial management system, which, among other features, provides up-to-date financial data available for online query, as well as paperless processing for purchase orders and payments.
- C The Census 2000 Cost Model provided an automated means to estimate staffing and budget requirements for Census 2000 based on a well-defined set of activities for the major components of census operations. The Cost Model tool was used to prepare the cost estimates for the budget process. It also was used to answer inquiries from Congress, the Department of Commerce, the Office of Management and Budget, senior managers at the Census Bureau, and our stakeholders.

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Section II.

**Content of
the Report and
Overview of
Census 2000
Operations**

II. CONTENT OF THE REPORT AND OVERVIEW OF CENSUS 2000 OPERATIONS

CONTENT OF THIS REPORT

This report presents the objective, major features, and milestone dates for each major element of this operational plan for Census 2000. The milestone dates for each section are shown as months of the calendar year and sometimes as exact days. Questions or comments relating to specific aspects of the operational plan may be directed to Decennial Communications, Decennial Management Division.

The Census Bureau is committed to making its data as accurate as possible for all uses. In accordance with a 1999 Supreme Court ruling, the Census Bureau will not use statistical sampling to produce the state population totals used for congressional apportionment. Because the Census Bureau expects it can produce more accurate data by supplementing traditional enumeration procedures with statistical sampling, it is considering the use of statistical methods (as described below) to produce the more detailed data required for redistricting and federal programs. The process for the decision on whether or not to implement a statistical adjustment of the redistricting and subsequent Census 2000 data products is described in Section XIII.D, Data Products.

Prior to April 1, 2001, the Census Bureau will have completed an enumeration of the American population, including a coverage measurement survey, that is designed to improve the accuracy of the initial counts. The coverage measurement survey, called the Accuracy and Coverage Evaluation (A.C.E.), is designed to improve census accuracy by increasing overall coverage and reducing the differential undercount. The A.C.E. is also designed to correct for the smaller, though not insignificant, overcount that occurs when erroneous enumerations are included in the census.

Puerto Rico was enumerated using Update/Leave methodology, and the Island Areas were enumerated under List/Enumerate procedures. All operations described in this document for those enumeration methods apply to Puerto Rico and the Island Areas, respectively. Considerations unique to Puerto Rico and the Island Areas are described in sections XV and XVI, respectively.

OVERVIEW OF CENSUS 2000 OPERATIONS

Census 2000 enumerated the residents of the United States, Puerto Rico, and the Island Areas and federal employees and their dependents living overseas on Census Day, April 1, 2000. Since the first census in 1790, the major phases of the census--planning and preparation, data collection and processing, and dissemination of results--have remained the same. Over time, however, the operational components of these phases have changed greatly. Changes have reflected the characteristics of our society, advances in technology and

methodology, and experience gained in previous censuses. This overview describes major elements of the preparatory, data collection, data processing, dissemination, and evaluation phases of the Census 2000 design. Figure II-1, on page II-11, depicts the key operations in each of these phases. The bottom layer of blocks shows activities comprising the preparatory phase, which provide a broad and firm foundation for effectively supporting successive steps in the census process. The next set of blocks shows major data collection activities, and the third layer represents data processing steps, including the capture of information provided by the public. The A.C.E. is conducted to statistically adjust for overcounts and undercounts in the initial counts. The top block shows the data dissemination phase, representing the goal of producing statistics that will serve our nation well.

The “traditional” approach to census taking, used in previous censuses, is to count each person, household, and housing unit directly to the greatest extent possible. For Census 2000, we intensified our efforts to encourage participation by expanding and improving ways for everyone to become aware of the census and to provide information about themselves and their households.

The remainder of this section provides an overview of the preparatory, data collection, data processing, and dissemination phases of the Census 2000 design. It provides a context for the remainder of the document by showing how each major element of the census relates to the others. As each element is described, we provide a reference to the section in this plan that provides more detail about it.

This overview first summarizes operations conducted during the data collection, data processing, and tabulation phases of the census. Having provided the context of those activities, it then describes the preparatory phase of the census, where the foundation of the other phases is laid. Finally, it describes testing, research, and evaluation components of the census.

DATA COLLECTION, DATA PROCESSING, AND DISSEMINATION

The major enumeration activities for Census 2000 occurred between March and August 2000. Throughout the period of data collection, there is a parallel period of data processing where the information is entered into the computer and checked. These data processing activities support enumeration by identifying areas where information is missing or incomplete. Once data collection is complete, data processing continues to assure the accuracy of the census results. The final product from data processing is a complete set of files of characteristics for each person and housing unit in the nation. Tabulations from these files are used to produce census results that will be used for many purposes.

Basic Data Collection

Just before April 1, 2000, most households in the United States, Puerto Rico, and the Island Areas received a census questionnaire on which their residents were to be enumerated.

- C For more than 80 percent of all households, the U.S. Postal Service (USPS) delivered census questionnaires. Household residents were asked to fill out their questionnaire and mail it back to the Census Bureau. This procedure, known as **mailout/mailback** (see section IX.A), covers most housing units that have city-style addresses (a house number and street name).
- C For the vast majority of the remaining households, a census worker left the addressed questionnaires and updated the list of addresses for the area. This procedure is known as **update/leave**. (See section IX.A.) Again, household residents were asked to fill out the questionnaire and mail it back to the Census Bureau.
- C In the remaining areas, which are sparsely settled or remote, census workers collected information directly. These **list/enumerate** procedures are described further in section IX.A.
- C Additional or modified procedures are used to ensure the complete enumeration of particular persons and areas:
 - Modified procedures are used to enumerate persons in special living situations. These procedures are described in section IX.D.
 - Various special procedures were also used in areas where extra effort to complete the enumeration was needed. These procedures are described in section IX.E.
 - Basic census procedures were tailored to conduct the best possible enumeration of American Indian and Alaska Native Areas and of Hawaiian Homelands. Planning for all aspects of the census in these areas is described in section X.

As questionnaires were returned by mail or by census workers, they were checked in against the list of those sent out. The handwritten information on the forms was converted to computer readable form and the data were checked by computer to determine whether we needed to attempt to contact households where one or more persons may have been missing. These contacts are described in section IX.F.

We encouraged public response through a strong marketing campaign and a network of partnerships established with community organizations; state, local, and tribal

governments; and others who helped encouraged their constituencies to participate in the census. During the period of time when questionnaires were being returned, we provided opportunities for people to be counted if they believed they did not receive a questionnaire, or that they were not included on their household's questionnaire, or that they would not otherwise be counted for any reason. These opportunities were greatly expanded and intensified compared to previous censuses, when we assumed that everyone would receive a census questionnaire and be enumerated. For Census 2000, people were able to pick up a "Be Counted" census form (see section IX.C) in a convenient location and mail it back to us. In addition, they were able to use our Telephone Questionnaire Assistance service to get answers to questions about filling out the form, or to provide their information over the phone, if necessary. (See section IX.B.) The Internet provided easy access for individuals to seek information and answers to questions regarding census questionnaires. Individuals could also respond to the census via the Internet.

NONRESPONSE FOLLOWUP

Even with our unprecedented efforts to encourage everyone to provide information, some persons and households did not do so. About 4 weeks after Census Day, we sent census workers to visit and enumerate people at these nonresponding addresses. This operation is called Nonresponse Followup. (See section IX.G.)

COVERAGE IMPROVEMENT FOLLOWUP

Up to this point, we had used all available methods to encourage people to participate in the census. We had visited all nonresponding households to collect information about the number and characteristics of all persons at those addresses. Without additional efforts, however, there would still be significant numbers of persons missing from the census enumeration. Therefore, we carried out additional operations intended to improve census coverage. (See section IX.H.)

In particular, census workers visited those housing units previously designated as vacant or nonexistent, but not confirmed by a second source. Experience shows that a small but significant portion of these units are, in fact, occupied, so this visit accounted for people who may be living there and who did not get counted previously. We also visited addresses for which questionnaires were returned, but for which we had no data.

DATA PROCESSING

As described above, the information supplied by respondents were entered into computers concurrent with field operations. The data were then processed to assure their accuracy and completeness. For example:

- C The computer checked each questionnaire to determine if there was any indication that one or more persons may have been missing. Whenever there was such an

- C When we received Be Counted forms in the mail or census information over the phone, we compared (matched) that information to the information on mail returned questionnaires to make sure that missing people were included and that they were not counted more than once. (See section IX.I.)
- C Computer checks were also done to determine how complete the data were for each person. These edits located questionnaire items with missing data and used statistical techniques to impute values based on characteristics of similar households.

All of these operations helped ensure that there is one record for each person in the census, and that all data records are complete.

Another set of processing operations ensured the integrity of the list of addresses and the housing units associated with them. There are several census operations that identified needed changes to our list of addresses. Whenever we identified new housing units or those that no longer existed, we updated our files. Processing these changes was a continuing operation involving data capture of changed addresses and locations and, if needed, changes to our geographic database.

After the data have been edited, processed, and tabulated, a Demographic Full Count Review will be performed by representatives of participating states. To date, 38 states and Puerto Rico are participating in the count review program, with at least one representative from each of the states. The reviewers have "Special Sworn Status" meaning that they take an oath of confidentiality and are subject to the same law as Census Bureau employees. Census Bureau staff have been trained to perform the review for those states declining to send representatives. Census Bureau staff will be involved in investigating anomalies and communicating results to all interested parties. The Census Bureau is solely responsible for any changes made to the data as part of this full count review process.

ACCURACY AND COVERAGE EVALUATION (A.C.E.)

Following the initial census, the Census Bureau conducted the A.C.E. Key components of the A.C.E. include the sample design, the survey itself, and the Dual System Estimation (DSE) used to compute the estimates of the true population.

The A.C.E. methodology for Census 2000 involves comparing (matching) the information from an independent sample survey to census records. In this process, the Census Bureau conducts field interviewing and computerized and clerical matching of the records. Using the results of this matching, the Census Bureau will apply the statistical methodology of the DSE to develop coverage correction factors for various population groups. If the Director decides it is necessary, the results will then be applied to the census files to produce all required Census 2000 tabulations, other than

apportionment (see section XII). The A.C.E. can be summarized as follows:

- Select a stratified random sample of blocks for the A.C.E.
- Create an independent list of housing units in the sample of A.C.E. blocks.
- Begin conducting telephone interviews of mail return housing units on a subset of the independent list.
- After the Nonresponse Followup, conduct a personal visit interview at every housing unit on the independent list not already interviewed by telephone.
- Match the results of the A.C.E. interview to the initial census.
- Resolve cases that may not match but that require additional information by conducting a personal visit followup interview.
- Use information from other similar people to impute missing information.
- Categorize the A.C.E. data by age, sex, tenure, and other appropriate predefined variables into groupings called post-strata.
- Calculate the coverage correction factors using DSE, that is, determine the extent to which people in each post-stratum have been over- or undercounted by the initial census.
- If the Director decides it is necessary:
 - Apply the coverage correction factors to correct the initial census data.
 - Tabulate the statistically adjusted census results.

DISSEMINATION

Once the final population counts have been processed, we are ready to provide the data. The first data produced from the census were the state totals provided to the President on December 28, 2000. These counts are used to reapportion the seats in the U.S. House of Representatives. By April 1, 2001, we will provide tabulations to each state so that they can redraw congressional, state, and local legislative districts. (The legal requirements relating to the distribution of apportionment counts and redistricting data are discussed in section III). The boundaries of areas for which redistricting data are summarized are identified through partnerships with state officials, an effort that began several years before Census Day. (See section XIII.B)

Most of the data from the census will be tabulated and disseminated electronically using the newly developed American FactFinder (formerly Data Access and Dissemination System or DADS). (See section XIII.A) This system will use new technology to provide fast and flexible access to census data for a wide array of data users. (See section XIII.D) In addition to tabulations, we will provide a full range of maps and other geographic products in hard copy and digital form. (See section XIII.C)

PLANNING AND PREPARATION

The previous section summarized the activities that take place to enumerate the population and produce census data. To ensure their accomplishment, there is a lengthy and complex period of preparing for all of the people, systems, and materials needed to make the census successful. Long before Census Day, we need to:

- C **Promote awareness of the census and its importance because the success of the census depends greatly on the cooperation of the public.** Our unprecedented efforts to promote and publicize the census included working with the media; state, local, and tribal governments; and organizations that encouraged their constituents to participate. A paid advertising campaign was coupled with a variety of special targeted activities to inform as many people as possible of the importance of the census and the many ways they have of providing their information. Our partnerships with governments and organizations recognize their expertise about the best ways to involve the people they serve. (See section IV.)
- C **Determine the questions that will be asked of the respondent and other household members regarding their living quarters (see section V.A) and design the questionnaires so that they will provide accurate and complete information.** We arranged for the questionnaire packages, including envelopes, to be printed and assembled. We also arranged for delivery by the USPS or census workers on a precise schedule. To encourage as many households as possible to return their questionnaires, we also sent an advance letter before the questionnaires were mailed, and a thank you/reminder postcard shortly after the questionnaires were delivered. (See section V.B.)

In 2000, as in every census since 1940, a sample of households were asked to respond to more questions than other households. Most households received a “short form,” but this sample received the “long form.” The sampling rate varied across different geographic levels, with about one of every six households overall receiving the long form. (See section V.D.)

In addition to the census questionnaires and mailing packages, a number of other data collection forms were designed, produced, and provided to support special data collection efforts. (See section V.B.)

- C **Compile lists of addresses and other identifying information about housing units and other places where people live or could live.** Different procedures to compile address lists were used in areas where the USPS delivers the questionnaires and areas where census workers deliver them. (See sections VI.A and VI.B, respectively.) Once compiled, all of these addresses form the Master Address File (MAF), which must be complete and accurate to help assure that the census results are complete and accurate. For both types of areas, the process of compiling the lists of addresses began long before Census Day, and several

phases of updating took place using information from the U.S. Postal Service, local and tribal governments, and census workers. (See sections VI.E., VI.C, and VI.D, respectively.) Each of these sources provides unique and important contributions to the accuracy of the information on the address lists. Equally important, a unique location description was associated with each address. These locations were needed so census workers could find addresses during field visits, data provided by respondents in multiple ways could be matched efficiently, and data could be tabulated in the correct geographic location. In areas with city-style addresses, the address itself provides a unique location description, but in other areas, a person must visit the living quarters, describe it in words, and spot it on a map.

Our tool for identifying the spatial location of living quarters and the other geographic information necessary for producing maps and census tabulations is a database called TIGER®*. (See section VII.) The TIGER database, which accounts for the entire area of the country, initially was developed during the 1980s and is updated continually. It contains information on physical features, including their names and attributes (for example, the address range associated with a street segment), the boundaries of legal, administrative, and statistical geographic entities, and other relevant data. Using the TIGER database, we can associate each address in the Master Address File with its corresponding record in TIGER to produce address files or listings and accompanying maps for use in census operations and to tabulate the census results. Throughout the decade and especially during the census, the address list and the TIGER database are linked and updated to ensure that both are kept current and consistent.

- C **Establish an extensive set of temporary offices to support the conduct of data collection, data capture, and data processing operations.** Local Census Offices manage the massive recruiting efforts needed to conduct c e n s u s operations, report progress, and transmit completed work. Establishing the infrastructure for these offices required long lead times in order to find and configure space; purchase equipment, furniture, and supplies; and recruit and train census workers for temporary positions. (See section VIII.A.)

Precensus address listing operations were managed by a network of Census Field Offices (CFOs), and data collection operations were managed by a network of Local Census Offices (LCOs).

*TIGER® is a registered trademark of the U.S. Bureau of the Census. For ease of presentation, the trademark symbols for TIGER and TIGER-related products are omitted from the text.

All of these offices report to Regional Census Centers in the same cities where the Census Bureau's permanent Regional Offices are located. The decentralized networks of offices are responsible for recruiting and managing staff for all field operations. Their establishment and management are performed by Census Bureau staff.

There are four Data Capture Centers, one of which is the Census Bureau's permanent data processing facility, the National Processing Center (NPC), in Jeffersonville, Indiana. The other three are in Pomona, California; Phoenix, Arizona; and Baltimore County, Maryland. Permanent Census Bureau staff establish and manage activities in the NPC, which performs both the same data capture functions as the other centers and several post-census processing operations after the other centers close. Establishing and managing the other three Data Capture Centers, including their equipment, software, and technical maintenance, were performed under contracts administered by Census Bureau staff. Contractors were responsible for checking in census questionnaires; for preparing the questionnaires for data capture; for capturing the data by using electronic imaging; and for ensuring the consistency of data files with the actual respondent-supplied information. The completed capture files were transmitted to headquarters for the operations needed to provide a final file of detailed census data. (See section XI.B.)

Computer specialists at headquarters, who work closely with statisticians and subject matter experts, designed an automated data processing system that supported preparatory activities, operated concurrently with capture operations during data collection, and processed the captured data. During the preparatory phases of the census, this system supported all activities related to building the address list and using the list for mailing questionnaires, selecting the sample of long form questionnaires, and providing control files for field data collection and data capture. During census data collection and capture operations, these headquarters processing systems matched and unduplicated responses for people who would otherwise be counted more than once, and identified cases for field and telephone followup operations. After data collection and capture, these systems performed final edits to ensure complete information for and about each person, conducted statistical estimation, and formatted complete data files to be used to produce census results in a variety of media. (See section XI.C.)

Recruiting temporary staff for census operations, in particular data collection, required hiring substantial numbers of persons for census jobs. Before hiring people, the Census Bureau tested them, made sure they met other requirements, and conducted applicant background checks. (See section VIII.B.)

A sophisticated and extensive telecommunications network supported all communication among the public, our decentralized offices, and headquarters. (See section XI.A.)

Telephone Questionnaire Assistance was performed under contract. The contractor conducted operations to answer questions about the census questionnaire and take information from respondents over the telephone, under the direction of Census Bureau staff.

The census must provide high quality information. It is critical that each operation that contributes to the accuracy of that information be performed well. Detecting and correcting errors that might otherwise be introduced is accomplished using Quality Assurance (QA) procedures. The operations for which QA procedures are implemented are described in section XIV.C.

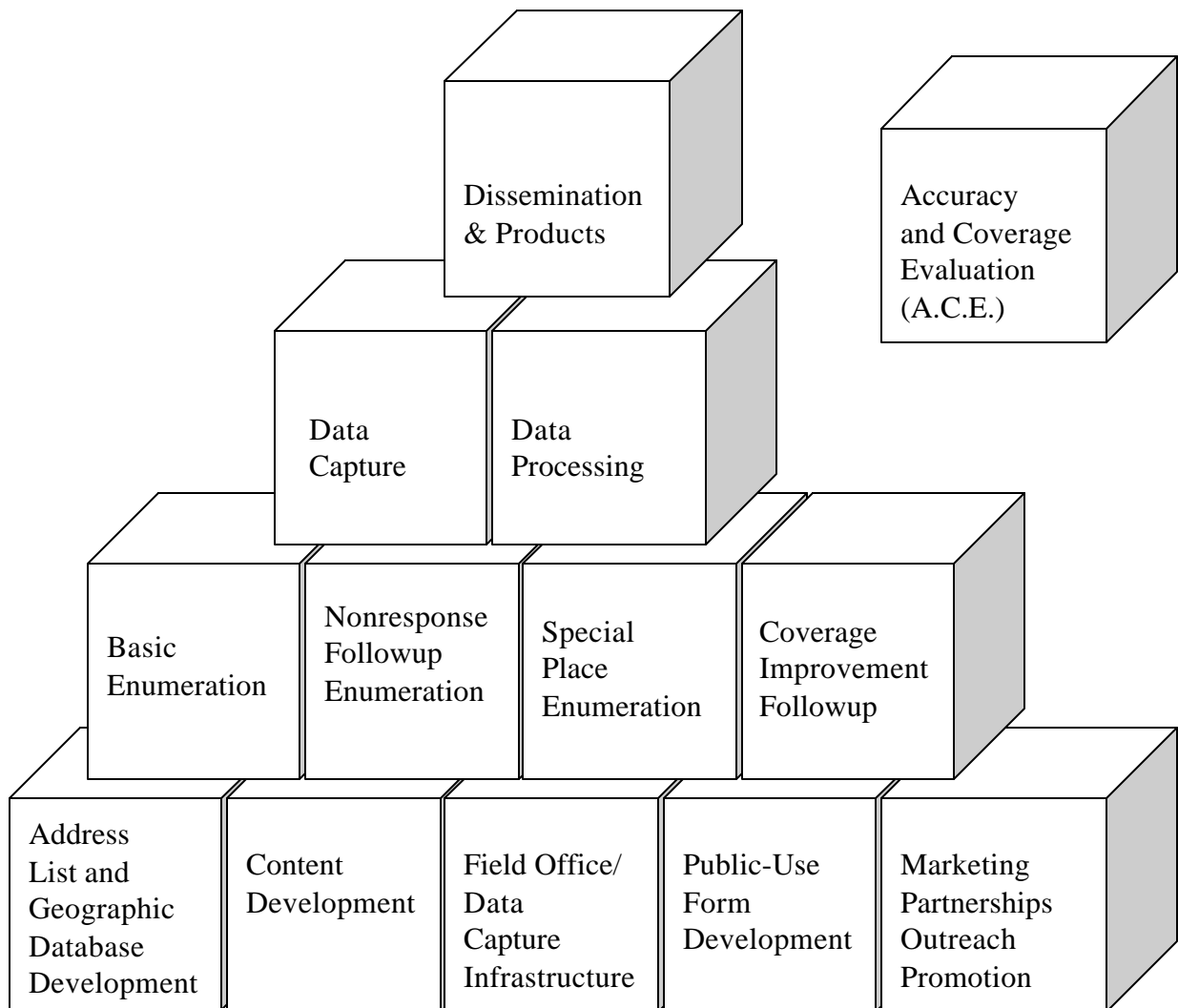
- C Design a system to produce tabulations and other data products from the census.** Our first products will be the state counts for the President, and block level data for the states. We worked with data users to define other basic products, and are readying American FactFinder for timely online access to all census data.

TESTING, DRESS REHEARSAL, EVALUATION AND RESEARCH

In 1998, we conducted a Dress Rehearsal of Census 2000 methods and procedures. The design of the Dress Rehearsal was based on testing and research conducted earlier this decade to address problems identified in the 1990 census. Continual improvement in the census process will again rely on Census 2000, which will include several studies to evaluate census quality and provide information for future census planning. In fact, planning for the 2010 census has already begun. Research and development efforts for 2010 will take advantage of the Dress Rehearsal and Census 2000 to provide a useful context for testing. For example, data from the Dress Rehearsal and Census 2000 (as well as other sources) will be used to explore the feasibility of using administrative records for the 2010 census. Other ideas for research studies and experiments to develop future census methods also were studied in Census 2000. In this way, the Census Bureau will continue its tradition of adapting census procedures to reflect our changing population, times, and technology. (See section XIV for further discussion of these efforts.)

Figure II-1. Census 2000 Process

II-11



United States
Census
2000

Section III.

Legal
Requirements

III. LEGAL REQUIREMENTS

The decennial census is mandated by the U.S. Constitution (Article I, Section 2) to provide the population counts needed to apportion the seats in the U.S. House of Representatives among the states. However, the Constitution does not prescribe how the decennial census should be conducted. In Title 13, U.S. Code, the Congress gave the Secretary of Commerce discretion to take the decennial census “in such form and content as he may determine, including the use of sampling and special surveys.”

On January 25, 1999, the Supreme Court ruled that Section 195 of Title 13 precludes the use of statistical sampling to produce congressional apportionment counts. However, this same provision requires the Census Bureau, if feasible, to produce statistically adjusted numbers from the decennial census for redistricting (Public Law (P.L.) 94 -171, see below) and other non-apportionment purposes. The Census Bureau Director has determined that it is feasible to incorporate the results of the Accuracy and Coverage Evaluation (A.C.E.) survey (see section XII) in the Census 2000 P.L. 94-171 data. This determination was based on operational considerations -- the ability to produce the statistically adjusted data within statutory and funding constraints -- and on the expectation that the adjusted data will be more accurate for non-apportionment uses of the data.

As a result of the Census Bureau Director’s “feasibility determination,” the Department of Commerce issued a rule (Title 15, Code of Federal Regulations, Part 101) codifying the process for the decision on whether or not to release statistically adjusted counts as the P.L. 94-171 data product. The rule contains a delegation of authority from the Secretary of Commerce to the Census Bureau Director to make the final determination regarding the methodology to be used in calculating the tabulations of population reported to States and localities under the terms of P.L. 94-171 (see below). The Director will make the determination by March 2001, after receipt of the recommendation of the Executive Steering Committee for A.C.E. Policy (ESCAP).

The planning and conduct of Census 2000 must comply with a number of other legal requirements, some of which specify deadlines, as described in the following:

- C Under the terms of Title 13, the Secretary of Commerce must deliver state population counts to the President within 9 months of Census Day (by January 1, 2001). These counts are used to reapportion the seats in the U.S. House of Representatives.
- C P.L. 94-171 requires that the Census Bureau provide selected census tabulations to the states by April 1 of the year following the census year. The states use these tabulations to redraw the boundaries of congressional districts, as well as other areas used for state and local elections.

- C Under the Voting Rights Act, the Census Bureau is required to provide to the states race and ethnicity data for small geographic areas to be used for the redistricting process specified in P.L. 94-171. The race and ethnicity categories required are those mandated by the standards for the classification of federal data on race and ethnicity. (See page III-3 below.) The Census Bureau, in response to the “Draft Provisional Guidance on the Implementation of the 1997 Standards for the Collection of Federal Data on Race and Ethnicity” issued by the Office of Management and Budget (OMB) on February 17, 1999, has decided to meet the requirements for the provision of data under P.L. 94-171 by providing the 63 categories of race in combination with Hispanic/Latino categories tabulated for both total population and people eighteen years of age and over. The 63 categories represent all of the possible single and multiple responses to the race question (there are five distinct races, plus “some other race”). The Census Bureau made its decision after extensive discussions with stakeholders, data users, and privacy advocates. In accordance with Title 13, the Census Bureau will continue to ensure the confidentiality of individual data in its tabulation and presentation of the P.L. 94-171 data.

- C The geographic scope of the population we enumerate in a decennial census is specified in Title 13 as covering the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, the Commonwealth of the Northern Mariana Islands, and Guam, and other areas as may be determined by the Secretary of Commerce. In Census 2000, we also enumerated the Pacific Island Area of American Samoa.

- C The Secretary of Commerce, acting under the authority of Title 13, is required to report to the Congress twice regarding the content of the census questionnaires: first, at least 3 years before Census Day (by April 1, 1997) on the subjects proposed for inclusion and again at least 2 years before the census (by April 1, 1998) on the proposed specific question wording. Accordingly, on March 31, 1997, the Census Bureau submitted to the Congress the list of subjects proposed for inclusion in Census 2000. Then, on March 30, 1998, the proposed questions for Census 2000 -- seven on the short form and 52 on the long form -- were submitted to Congress. (See section V.A.)

- C All of the questions on the Census 2000 questionnaire are either mandated (that is, federal law explicitly called for decennial census data) or required (that is, federal law explicitly called for data, and the decennial census was the only or historical source, or there were case law requirements imposed by the federal court system). For example, Congress has enacted laws requiring the use of data to allocate federal funding to states, cities, school districts, and other governmental units to administer a wide variety of important programs.

- C On October 30, 1997, the OMB issued revisions to the standards for the classification of federal data on race and ethnicity. These standards provide guidelines on how all federal agencies are to collect and present data on race and ethnicity. According to the standards, there are five basic categories for data on race: American Indian and Alaska Native, Asian, Black or African American, Native Hawaiian and other Pacific Islander, and White. These five categories are the minimum set for data on race for federal statistics. There are two categories for data on ethnicity: 1) Hispanic or Latino and 2) not Hispanic or Latino. On Census 2000 forms, respondents were able to select one or more of the above-referenced racial categories and/or indicate "some other race." As mentioned previously, the OMB has also issued "Draft Provisional Guidance on the Implementation of the 1997 Standards for the Collection of Federal Data on Race and Ethnicity." Under this guidance, in cases where multiple race responses are collapsed for reporting purposes, federal agencies must make available the total number reporting more than one race, if confidentiality and data quality requirements can be met. As the OMB has indicated, these guidelines are necessarily provisional pending the availability of data from Census 2000 and other data systems as the new standards are implemented. The guidelines are likely to be reviewed and refined as federal agencies and others gain experience with data collected under the new standards.
- C P.L. 94-311 requires the use of Spanish-language forms and Spanish-speaking interviewers in areas having significant concentrations of Hispanic populations. In Census 2000, the Census Bureau mailed census forms in Spanish (or one of four other non-English languages) to households that requested them in response to an advance letter informing respondents that they would be receiving a questionnaire shortly. For more information about the Census 2000 language program, see Section V.C., Language Program.
- C Before the census forms went to print, the OMB, as required by law, reviewed the proposed questions to ensure that they met the data needs of the executive branch departments and agencies responsible for implementing programs mandated and authorized by the Congress. In addition, OMB, under the terms of the Paperwork Reduction Act (Title 44), reviewed the questionnaires to ensure that the time burden for a household to respond to either questionnaire was held to a minimum. For more information on this topic, see Section V.A., Questionnaire Content.
- C P.L. 103-430 requires that the U.S. Postal Service provide its address information to the Census Bureau to improve the Master Address File (MAF).
- C Established in response to the requirements of P.L. 103-430, the Local Update of Census Addresses (LUCA) program provided an opportunity for local and tribal officials to designate a liaison to review the address information in the MAF for his or her jurisdiction and the information in the Census Bureau's geographic database

(known as TIGER) to improve the completeness and accuracy of those databases. For more information about LUCA, see Section VI.C., Local Update of Census Addresses Program.

- C As specified in Title 13, Census Day for Census 2000 is April 1, as it has been for each decennial census since 1930. All census quality check interviews and contacts refer to the count with reference to April 1, regardless of when the initial questionnaire is filled out.
- C Title 13 guarantees the confidentiality of respondents' answers to the census forms. In fact, the Census Bureau takes extraordinary steps throughout the entire census process to ensure the confidentiality of census information. All Census Bureau employees must take an oath of confidentiality. As required by Title 13, the Census Bureau maintains tight security over completed questionnaires. Furthermore, disclosure-avoidance programs during the data tabulation phase are designed so that individual persons or housing units cannot be identified, either from paper or electronic tabulations.
- C Title 44 establishes that individual census information from the decennial census cannot be made public for 72 years.
- C P.L. 105-119 (also known as the "Department of Commerce and Related Agencies Appropriations Act, 1998"), section 210 establishes a board known as the Census Monitoring Board. The function of the board, as stated in the legislation, is "to observe and monitor all aspects of the preparation and implementation of the 2000 decennial census, including all dress rehearsals and other simulations of a census in preparation therefor." The board will cease to exist on September 30, 2001. Section 209(j) of this same law requires that the Census Bureau, for both Census 2000 and the Dress Rehearsal, make "publicly available" for all levels of geography "the number of persons enumerated without using statistical methods."

United States
Census
2000

Section IV.
**Partnership
and
Marketing
Program**

IV. PARTNERSHIP AND MARKETING PROGRAM

OBJECTIVE

The Census Bureau integrated its Census 2000 communications and outreach efforts with the Census 2000 Partnership and Marketing Program. This program had three goals:

- Improve the overall response rate for Census 2000
- Reduce the differential undercount
- Communicate a consistent census message

MAJOR FEATURES

There were three phases to the Partnership and Marketing Program. Prior to Census Day, the program was geared toward building awareness that the census was approaching and how it would benefit the community. During the mailout/mailback period, the campaign focus shifted to motivating people to return their questionnaires promptly to increase the initial mail response rate. The program also encouraged cooperation with census enumerators during the followup operation with nonresponding households and the other census operations to let people know the census was not over.

The comprehensive marketing and partnership strategy includes:

- Partnerships
- Paid advertising
- Special methods to encourage response from direct mail
- Media public relations
- Promotions and special events

Partnerships

The Census Bureau has formed partnerships with other federal agencies and state, local, and tribal governments, as well as with community-based organizations and businesses. The Census Bureau recognizes the unique local knowledge, experience, and expertise these partners can bring to planning and taking an accurate census. These partners also serve as trusted agents in their communities and are in the best position to motivate their constituents about the importance of participating in the census.

To establish and maintain continuing liaison and partnership with government and nongovernment entities, we hired approximately 640 Census Bureau partnership specialists to work at the community level developing partnerships and supporting partners in their outreach efforts.

The Census Bureau coordinated the full range of Census 2000 programs with governmental and nongovernmental partners to ensure that we did not make unnecessary or overlapping requests of those willing to work in partnership. We also expanded in-kind support, such as printing, to local partners.

Census 2000 provided numerous opportunities for government and nongovernment entities to participate in partnership activities. Examples of these activities include:

- C The Census Bureau has formed a partnership with the U.S. Postal Service to use its address information to enhance the Census 2000 Master Address File. The U.S. Postal Service provides the best nationwide source of address updates. These address updates helped reduce the number of households missed in Census 2000.
- C Under the Local Update of Census Addresses program (see section VI.C), partnerships with local and tribal governments were formed to provide valuable assistance in reviewing and updating the Master Address File.
- C Partnerships with governments and organizations supported Census 2000 promotional activities by establishing Complete Count Committees, issuing public statements of endorsement, holding press conferences, placing census articles in newsletters, including census messages in employee paychecks, sponsoring census promotional events, and posting census promotional material in agency facilities.
- C Partnerships with local organizations aided in recruiting candidates to apply for census office and field enumerator positions. Temporary positions were available in all areas of the country.
- C Partnerships with community-based organizations and local and tribal governments identified strategic and high visibility locations in the community to place unaddressed questionnaires, called "Be Counted" forms, for people to pick up and complete. These partners also provided space and staffing for Questionnaire Assistance Centers and office space to test and train temporary census workers.
- C During the enumeration period, partnership and outreach efforts reminded people of ways to respond if they did not receive a questionnaire. Mail response rates were made available so that outreach/partnership efforts targeted areas that were slow to respond.

Paid Advertising

For the first time, the Census Bureau implemented a paid advertising campaign to promote a decennial census. In designing the Census 2000 paid advertising campaign, we benefited greatly from the advice given by the U.S. military, the U.S. Postal Service, and private communications contractors, our advisory committees, as well as our own survey and focus group research. Young and Rubicam, Inc. was selected to conduct the Census 2000 advertising campaign. The major components included:

- C **National media campaign.** A national media campaign was aimed at increasing mail response. The campaign included television (both broadcast and cable), radio, and print media, and outdoor advertising.
- C **Targeted advertising effort.** An advertising effort directed at increasing mail response among targeted audiences, especially historically undercounted populations, used national, regional, and local media outlets. The local effort used, for example, community news outlets, posters, flyers, and mass transit advertising.
- C **Special advertising messages and campaigns.** An early educational message targeted to hard-to-enumerate populations was launched in October of 1999 and ran as an enhancement to the primary advertising campaign. After the completion of the national media campaign, a second national campaign increased the public's awareness of the nonresponse followup operation and the importance of cooperating with enumerators. A third message included "quality counts" - a reminder of census operations to improve the census counts.

Special Methods to Encourage Response From Direct Mail

- C **Integrated mailing package.** For the first time, the mailing package design--including the questionnaires, envelopes, motivational slogans, and logo--was wholly compatible and integrated into the design of the rest of the marketing plan.
- C **Direct mail campaign and mail strategy.** To increase questionnaire mail response, the Census Bureau used a strategy that focused on multiple mail contacts with respondents, including mailing respondents an advance letter, a questionnaire, and a thank you/reminder postcard.

Media Public Relations

For Census 2000, the public relations efforts were decentralized with media specialists assigned directly to local census offices to cultivate press contacts and respond to media inquiries.

Core messages were developed from Headquarters with flexibility to tailor message according to local interests. Technology was maximized with webcasts and satellite video news feeds designed to be picked up by both national and local media outlets.

Promotion and Special Events

A variety of special events--such as parades, athletic events, and public service television documentaries--was co-sponsored by state, local, and tribal governments and by community organizations and businesses. A Census 2000 Road Tour also traveled throughout the United States making approximately 2,000 stops for community events aimed at generating awareness about Census 2000.

The "Census in Schools" project, "Making Sense of Census 2000," offered educators in all public, private, Bureau of Indian Affairs, and tribal schools the opportunity to acquire colorful, hands-on, high-interest, grade-level appropriate lessons to help introduce students to Census 2000. Nearly two million United States teachers requested and received the kits for grades K-12 while 113,000 principal kits were distributed to United States school principals. Another quarter million Adult "English as a Second Language"/Citizenship/Literacy booklets; Head Start kits; and Take-home guides were distributed.

MILESTONES

July 1996	Began hiring 12 government partnership specialists (one per region)
July 1996	Began forming partnerships with local and tribal governments for geographic programs
April 1997	Began forming partnerships with national/umbrella governmental and nongovernmental organizations
October 1997	Awarded contract to Young and Rubicam Inc. for a paid advertising campaign
October 1997	Began hiring additional partnership specialists
October 1997	Began forming partnerships with local media, community organizations, and businesses
March 1998	Implemented the prototype advertising campaign for Census 2000 during Dress Rehearsal
January 1999	Implemented the Census in Schools program
October 1999-January 2000	Launched the early education phase of the advertising campaign
January-April 2000	Implemented the motivational phase of the
December 2000	

	advertising campaign and a media campaign to encourage households to mail back their questionnaires
February-April 2000	Implemented special promotional events
April 2000	Conducted the nonresponse phase of the national advertising campaign
July 2000	Implemented "quality counts" message

December 2000

United States
Census
2000

Section V.
Questionnaire
Content, Data
Collection Forms,
and Sampling Plan

V.A. QUESTIONNAIRE CONTENT

OBJECTIVE

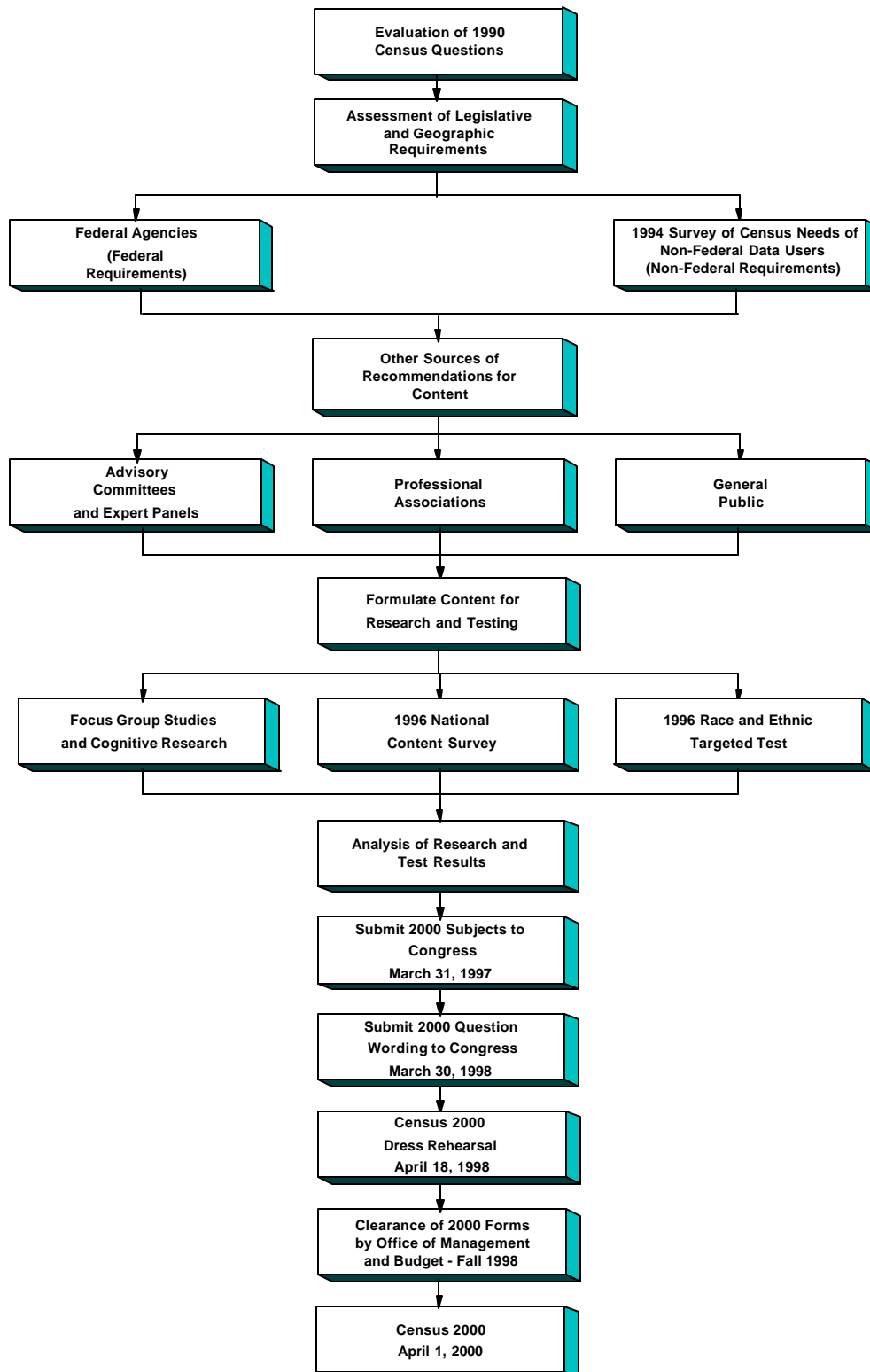
The Census 2000 questionnaires had to collect data the nation needs to meet the statutory data requirements of the federal agencies and to administer state, local, and tribal government programs. The Census Bureau's job was to balance these needs against the length of the questionnaires and the burden on respondents to complete them.

A formal content development process was used to select the questions for the census forms. The objective was to develop questions that are easy to understand and answer by all segments of the population and thus yield the highest and most valid response.

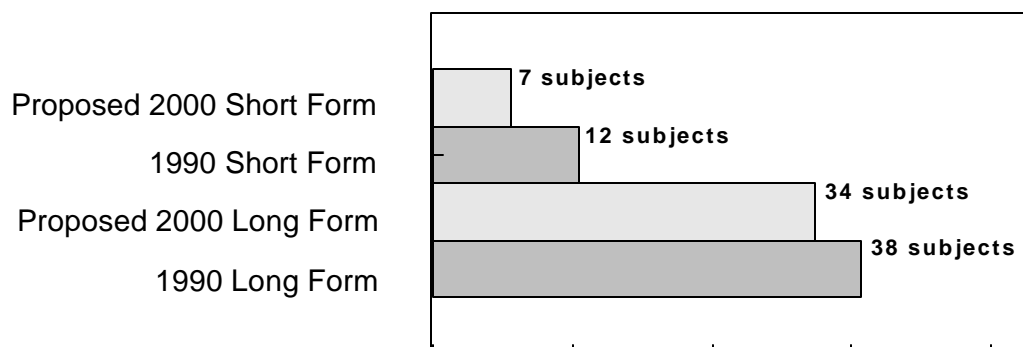
MAJOR FEATURES

The major components and general timing of Census 2000 content development activities are shown in figure V-1 on page V-2.

- C Shortly after the 1990 census, the Census Bureau reviewed and evaluated the 1990 census questions through a content reinterview.
- C The Census Bureau, with the support and cooperation of the Office of Management and Budget (OMB), then organized an extensive review and consultation program to determine which subjects should be included in Census 2000.
- C We assessed the legislative and geographic requirements of census data for both the federal and nonfederal sectors. *Federal* agencies were asked to identify all legal mandates and programs requiring census data. *Nonfederal* requirements were obtained by means of a survey directed to a broad spectrum of data users, such as state, local, and tribal governments; ethnic and community organizations; the business sector; academic researchers and librarians; religious groups; and the general public.
- C We maintained regular contact with our standing advisory committees, expert panels, professional associations, housing data-user groups, and community and ethnic organizations to ensure that all segments of the data-user community were kept informed throughout the content development process.

Figure V-1. Content Planning Path for Census 2000

- C Two census tests were conducted to evaluate the questionnaire content proposed for Census 2000. The most extensive of these was the 1996 National Content Survey (formally known as the U.S. Census 2000 Test), which was designed to test new and revised question wording, formatting, and sequencing. The 1996 Race and Ethnic Targeted Test (formally known as the 1996 Census Survey) examined several major possible changes to the race and ethnicity questions for Census 2000. Also, the Census Bureau, in partnership with the Bureau of Labor Statistics, asked supplemental questions on race and ethnicity as part of the May 1995 Current Population Survey. During this time, the Census Bureau also conducted a wide range of focus group studies and cognitive research to elicit information about questionnaire content and design.
- C On March 31, 1997, as required by law, the Census Bureau submitted a list of subjects planned for inclusion in Census 2000 to the Secretary of Commerce and to the Congress. As the chart below shows, both the short and long forms proposed for Census 2000 have fewer subjects than their 1990 census counterparts.



- C Table V-1 on page V-4 provides the content for the Census 2000 questionnaire.
- C As required by law, on March 30, 1998, we submitted the actual questions for Census 2000 to the Congress. Thus, we had determined the particular wording, format, and sequence of individual questions. To make these critical decisions, the Census Bureau was guided by:
- C Any budget and content constraints imposed by the Congress
 - C Results of our Census 2000 research and testing program
 - C Advice generated from our ongoing consultation process with stakeholders
 - C Legislative requirements for data from the questions

TABLE V-1. SUBJECTS INCLUDED IN CENSUS 2000**100-PERCENT SUBJECTS****POPULATION**

Name
Sex
Age
Relationship
Hispanic origin
Race

HOUSING

Tenure (whether home is owned or
rented)

SAMPLE SUBJECTS**POPULATION*****Social characteristics:***

Marital status
Place of birth, citizenship, and
year of entry
Education-school enrollment and
educational attainment
Ancestry
Residence 5 years ago (migration)
Language spoken at home
Veteran status
Disability
Grandparents as caregivers *

Economic characteristics:

Labor force status (current)
Place of work and journey to work
Work status last year
Industry, occupation, and class of
worker
Income (previous year)

HOUSING***Physical characteristics:***

Units in structure
Number of rooms
Number of bedrooms
Plumbing and kitchen facilities
Year structure built
Year moved into unit
House heating fuel
Telephone
Vehicles available
Farm residence

Financial characteristics:

Value of home
Monthly rent (including congregate
housing)
Shelter costs (selected monthly owner
costs)

*New subject for Census 2000.

1990 CENSUS SUBJECTS DROPPED FOR CENSUS 2000**POPULATION**

Children ever born (fertility)
Year last worked (*An abbreviated screener
was included with questions about industry,
occupation, and class of worker; this allows
us to reduce respondent burden and properly
define the "experienced civilian labor force."*)

HOUSING

Source of water
Sewage disposal
Condominium status

- C The questions we asked in the Census 2000 Dress Rehearsal were, to the greatest extent possible, the same as those we included in Census 2000. In this way, we developed prototypes of the products planned for Census 2000, solicited comments from our stakeholders, and fine-tuned the census products.
- C The Census Bureau also is required by law to submit the recommended questions to the OMB, which has the responsibility of ensuring that the questions meet essential data needs and that respondent burden (the time it takes for the average household to fill out a questionnaire) is held to a minimum. The Census Bureau submitted these to OMB on June 30, 1998.

MILESTONES

March 31, 1997	Submitted subjects planned for Census 2000 to the Congress
March 30, 1998	Submitted questions planned for Census 2000 to the Congress
June 30, 1998	Submitted questions planned for Census 2000 to OMB

V.B. THE CENSUS QUESTIONNAIRES

OBJECTIVE

The goal in developing the Census 2000 questionnaires was to increase mail response and accuracy of the information collected. While the mailout questionnaires accounted for the bulk of Census 2000 data collection, the Census Bureau developed many additional forms to ensure that everyone had the opportunity to participate in Census 2000.

MAJOR FEATURES

In Census 2000, the questionnaire mailout/mailback system again was the primary means of census-taking. Because results of the Dress Rehearsal indicated that the use of a second mailing could contribute serious inaccuracies to the census count, the Census Bureau only mailed one official questionnaire per household. Cities, towns, and suburban areas with city-style addresses (house number and street name), and rural areas where city-style addresses are used for mail delivery comprise the mailout/mailback areas. In areas where the addresses are predominantly noncity-style, census enumerators delivered addressed questionnaires for respondents to mail back. Every housing unit in the country received either the “short form” or “long form” questionnaire.

- The Census **short form** was delivered to approximately 83 percent of all housing units. It allowed the respondent to provide complete information for six household members and to list up to six additional household members (with Census Bureau followup to obtain information on these additional members). The Census 2000 form asked for information on only seven subjects (name, sex, age, relationship, Hispanic origin, and race) for each household member, as well as whether the home is owned or rented.
- The Census **long form** was delivered to a selected sample – approximately 17 percent–of all housing units. It also allowed the respondent to list up to 12 household members. This form included the short form questions, as well as a number of additional questions on the social, economic, and financial characteristics for up to six household members (with Census Bureau followup for other members when needed). The long form also included questions on the physical characteristics of the housing unit. The Census Bureau used a variable rate sampling plan to collect the long form data. This allowed for more efficient allocation of the sample and maintained the accuracy and reliability of census data at small geographic levels while reducing respondent burden.

The questionnaires collected data the nation needs to meet the statutory data

requirements of the federal agencies and to administer state, local, and tribal government programs. The Census 2000 questionnaire development process began with an evaluation of the questions used in 1990. All federal agencies were asked to identify programs required by law to use census data. Non-federal requirements were obtained by a survey directed to a broad spectrum of data users, such as state, local, and tribal governments; ethnic and community organizations; the business sector; academic researchers and librarians; religious groups; and the public. Two extensive tests were conducted in 1996 to evaluate the proposed questions. Also, the Census Bureau continually conducted a wide range of focus groups and cognitive research on the proposed questions. On March 31, 1997, as required by law, the Census Bureau submitted to the Congress the list of subjects planned for inclusion in the short and long form questionnaires, and on March 30, 1998, submitted to the Congress the actual questions.

In addition to carefully formulating the questions, the Census Bureau has made a number of other improvements to the questionnaires to increase the mail response and improve the accuracy of the information collected in Census 2000:

- **Respondent-friendly Format:** The Census Bureau worked with private sector designers to produce streamlined forms that were easier to understand, explained why the questions are needed, and were simple to complete and return. Graphic icons, color contrasts, navigational aids, better grouping of questions, and more accessible instructions were some of the improvements over the questionnaires used in 1990.
- **Multiple Mail Contacts:** The Census Bureau's research has shown that multiple mail contacts with respondents will increase the response rate. In Census 2000, respondents received an advance letter alerting them that the form is coming, their official questionnaire, and a later postcard reminding them to return the questionnaire if they had not done so already.
- **Questionnaires in Other Languages:** The Census Bureau printed both short and long form questionnaires in five other languages (Chinese, Korean, Spanish, Tagalog, and Vietnamese). These questionnaires were mailed to households who requested them in response to the advance letter.
- **Special Data Collection Questionnaires:** The Census Bureau created additional "special forms" to be used to increase the participation of people who might otherwise go uncounted in Census 2000.
 - **Simplified Enumerator Questionnaires:** Short and long form versions were developed and worded to conform to a personal interview method of data collection. These questionnaires were used as basic data

collection instruments by field enumerators during personal visits to households.

- **Be Counted Questionnaires:** A short form was developed for the Be Counted program (see section IX.C) for people who did not receive a questionnaire or believed they were not included elsewhere on a census form. These unaddressed questionnaires were printed in English and five other languages (Chinese, Korean, Spanish, Tagalog, and Vietnamese) and placed at locations people frequent—such as community centers and Walk-in Questionnaire Assistance Centers. The responses on these forms were checked against census records to eliminate duplications.
- **Individual Census Questionnaires:** Several types of questionnaires -- containing only population questions for one person -- were used to enumerate specific segments of the population. These questionnaires were used to count people in living arrangements requiring a special operation, such as college dormitories, nursing homes, shelters, prisons, and persons on military bases and on ships assigned to a home port in the United States. Long form versions were developed for some of the forms and many of these special questionnaires were translated into Spanish.

MILESTONES

December 1998	Government Printing Office began awarding contracts for printing short forms and long forms
April 1999	Began questionnaire printing Completed advance letter printing
March 1-3, 2000	Advance letter mailout (update/leave addresses)
March 6-8, 2000	Advance letter mailout (mailout/mailback addresses)
March 3, 2000	Completed Questionnaire printing and addressing for mailing
March 2000	Census enumerators left questionnaires in most areas with noncity-style addresses
March 13-15, 2000	U.S. Postal Service delivered a questionnaire to every mailout/mailback address
March 20-22, 2000	Reminder postcard mailout (mailout/mailback addresses)
March 27-29, 2000	Reminder postcard mailout (update/leave addresses)

December 2000

V.C. LANGUAGE PROGRAM

OBJECTIVE

The purpose of the language program was to support the Census 2000 goals and objectives by providing census information and assistance in languages other than English (languages other than Spanish in Puerto Rico). Census Bureau research indicated that the inability to speak or read English well (Spanish in Puerto Rico) was a barrier to a successful enumeration. The availability of multiple language assistance helped create a Census 2000 climate that promoted goodwill and cooperation between the Census Bureau, our census partners, and respondents throughout the nation.

MAJOR FEATURES

The Census Bureau took the following steps through the language program to motivate individuals to respond nationwide:

Language Questionnaires

- **Special Requests:** The Census 2000 language program offered respondents the following alternative: all households receiving an addressed advance letter had the opportunity to request a questionnaire in Chinese, Korean, Spanish, Tagalog, or Vietnamese. The Census Bureau selected these five additional languages by reviewing the ten languages spoken by the largest populations in the United States. These ten language groups were then crossed with the Census Bureau's established "hard to count" index. The resulting largest top five linguistically isolated household populations speaking a language other than English (which have historically been the most difficult to enumerate) spoke Spanish, Chinese, Vietnamese, Tagalog, and Korean. In Puerto Rico, the largest linguistically isolated household population speaking a language other than Spanish spoke English. Linguistically isolated households are those households where the language spoken is other than English and no one over the age of 14 speaks or reads English very well.
- **Translation, Printing, and Distribution:** The Census 2000 English mailout/mailback short and long questionnaires were translated and printed in Spanish, Chinese, Tagalog, Vietnamese, and Korean. The "Be Counted" English questionnaires were translated, validated, and printed in Spanish, Chinese, Tagalog, Vietnamese, and Korean. These questionnaires were available upon request to any stateside respondent receiving a Census 2000 advance letter. The advance letter was imprinted with the Census barcode identifier associated with

each specific household and mailed to all households for which the Census Bureau has a U.S. Postal Service deliverable address in both the mailout/mailback and update/leave areas. Respondents were asked to indicate which language questionnaire they would prefer, return their advance letter in an enclosed postage paid envelope, and hold the English questionnaire they will automatically receive through the mail or through update/leave delivery. The staff in NPC received and recorded the language questionnaire request and mailed the appropriate language questionnaire to the respondent. In Puerto Rico, the update/leave short and long form questionnaires were available in Spanish and English via the Telephone Questionnaire Assistance and Questionnaire Assistance Center procedures.

- **Processing:** Specially requested non-English questionnaires were processed at the Census Bureau's National Processing Center (NPC) in Jeffersonville, IN. All mailed back non-English questionnaires were checked-in through the laser sorter at the NPC. Spanish language questionnaires were processed identically to English language questionnaires and no translation or special handling was performed. All non-English/non-Spanish language forms received special handling. The special handling unit examined the questionnaires to determine the language of the write-in responses. The non-English responses were translated into English. All responses were transcribed to corresponding English questionnaires. Appropriate barcodes were added to identify the form as a replacement and annotations were made to indicate transcription and translation. These new questionnaires were logged back into the tracking system as replacements and processing continued.

"Be Counted" forms were assigned a processing identification code at check-in. Following this procedure, the "Be Counted" forms followed the same process as the short and long forms.

Language Assistance Guides

- **Layout:** Language guides are a positive complement to the Census 2000 language program designed as visual aids to assist respondents completing the Census 2000 short and long form questionnaires.
- **Languages:** The Census Bureau developed a list of languages based on the 1990 Decennial Census data of linguistically isolated households plus the most current immigration figures resulting in projected household populations for Census 2000. Using that list as a baseline, the Census Bureau consulted with the Department of Commerce, the Director of Refugee Resettlement at the Department of Health and Human Services, the Census Race and Ethnicity Advisory Committees, Congressional liaisons, and public interest groups to develop a final list of languages for Census 2000. Language assistance guides were printed in the following 49 languages:

Albanian	Amharic	Arabic	Armenian	Bengali
Burmese	Cambodian	Chamorro	Chinese	Creole
Croatian	Czech	Dari	Dinka	Dutch
Farsi	French	German	Greek	Hebrew
Hindi	Hmong	Hungarian	Ilocano	Italian
Japanese	Korean	Kurdish	Laotian	Polish
Portuguese	Romany	Romanian	Russian	Samoan
Serbian	Slovak	Somali	Spanish	Swahili
Tagalog	Thai	Tibetan	Tigrinya	Tongan
Ukrainian	Urdu	Vietnamese	Yiddish	

The language assistance guides in Puerto Rico were in Haitian/Creole.

- **Translation:** The Census Bureau contracted with an outside firm for the translation and validation of the Census 2000 language assistance guides. Also, regional census centers worked with census partners to translate and reproduce additional guides in languages localized to their specific communities. The Census Bureau recruited bilingual enumerators indigenous to the neighborhoods they enumerated and provided a Census 2000 Language Identification Flashcard (D-3309) for respondents to identify which language is spoken in the household.
- **Printing:** Unlike the questionnaires, language assistance guides were developed and printed by census partners or community organizations in additional languages upon request in a very short time frame. Guides could be reproduced without compromising technical and data capture specifications.
- **Distribution:** The Census Bureau furnished approximately 18 million language assistance guides to questionnaire assistance centers, local census offices, regional census centers, community groups and organizations, partnership specialists, and telephone questionnaire assistance staff. Language assistance guides were distributed to census partners in advance of Census Day. This allowed for broader dissemination and advertising in conjunction with community events. Also, the Census Bureau placed both the short and long form version of all the language guides on the Internet for respondent use.

Telephone Questionnaire Assistance (TQA)

The Census Bureau identified potential constraints on the number of languages it could support through TQA. The objective was to support the same languages for TQA as for “Be Counted” and the mailbout/mailback questionnaires. The volume of

calls to the toll-free telephone assistance number in 1990 significantly exceeded all expectations. Given the Census Bureau's experience during the 1990 Census, the decision was made to rely on the professional call-center industry to provide telephone assistance for Census 2000. For Puerto Rico, the TQA supported Spanish and English language calls.

Foreign language questionnaires were not available through TQA. Stateside callers requesting questionnaires in languages other than English through TQA received the language assistance guide of their choice. In Puerto Rico, callers requesting questionnaires other than the Puerto Rico Spanish form were offered the option of an English Puerto Rico form or the Spanish form with a language guide.

Education, Outreach, and Promotion

The Census 2000 education, outreach, and advertising plans developed by the Census 2000 Publicity Office (C2PO) ensured that the Census Bureau reached targeted audiences – especially those who learned a language other than English as their native language – with outreach, education, and promotion materials to support the decennial programs. For each target audience, the plan identified the group, the purpose, the required materials, the distribution, and the languages in which documents or media are translated. Some of the outreach materials translated into languages other than English included fact sheets, instructional manuals, reference booklets, and drop-in articles for general news releases and targeted organizational newsletters and newspapers. These articles were coordinated with the fact sheets and other publications and posted on the Internet for easy access by census partners and interested individuals. This Internet access enhanced the language program availability to many diverse communities by allowing partners and/or the general public to translate census articles into any language. Videos and posters were developed in a variety of different languages to support Census 2000 partnership activities.

The advertising campaign used powerful and effective messages to motivate each household to fill out and return the census questionnaires. This is especially critical within the “hard to count” populations where languages other than English are predominantly spoken. The advertising contractor needed to be able to translate materials into numerous languages (and possibly some dialects) and to have the resources to provide conceptual as opposed to literal translations.

MILESTONES

July 31, 1998	Finalized language business case analysis
August 1, 1998	Identified potential language translation contractors
December 23, 1998	Awarded TQA contract
March 1999	Awarded language translation contract (language assistance guides)

December 2000

April 1999	Awarded language translation contract (questionnaires)
April-August 1999	Provided final print files to contractor and Data Capture program (questionnaires and language assistance guides)
December 1999	Delivered printed language assistance guides to NPC for distribution
March 2000	Public access to language documents on the Internet
March 2000	Advance letter/foreign language requests (NPC)
March-April 2000	Language questionnaire mailout (NPC)

December 2000

V.D. SAMPLING PLAN FOR THE LONG FORM QUESTIONNAIRE

OBJECTIVE

Since the 1940 census, the detailed decennial census data have been collected from a sample of housing units. In Census 2000, the Census Bureau delivered the long form questionnaire to a sample of housing units. This use of sampling allowed the Census Bureau to reduce cost and maintain the level of respondent burden comparable to the 1990 census.

MAJOR FEATURES

Decennial census data collected on a variety of socioeconomic and housing subjects are required by federal agencies for implementing programs defined in legislation. In addition, these data are used by state, local, and tribal governments, as well as the private sector, for planning and developing social and economic policy and a myriad of other uses.

To collect these valuable data, Census 2000 implemented a **variable rate sampling plan**. Use of variable sampling rates allows for more efficient allocation of the sample and maintains the accuracy and reliability of census data at small geographic levels (block groups, census tracts, and small communities) while reducing respondent burden.

The variable rate sampling plan for the Census 2000 long form is similar to the 1990 census scheme and is basically as follows:

- C The overall sampling rate is about 1-in-6 households or 17 percent.
- C We assign sampling rates of 1-in-2, 1-in-4, 1-in-6, or 1-in-8 to functioning governmental units and census tracts based on precensus counts of housing units. School districts are considered governmental units.

MILESTONES

September 1998
July-August 1999

Determined final long form sampling methodology
Determined long form sampling rates to
implement variable rate sampling methodology

December 2000

V.E. U.S. POSTAL SERVICE PARTNERSHIP

OBJECTIVE

The Census Bureau recognized it could not accomplish its goals for Census 2000 working alone. It needed to reach out early and consistently to partner with the U.S. Postal Service (USPS) to achieve its fundamental strategies for change.

MAJOR FEATURES

In November 1990, the Census Bureau and the USPS established an interagency Joint Committee for Census Planning. The committee made great cooperative strides in many areas including:

- The enactment of Public Law 103-430 which authorized the release of USPS address information under restricted conditions of confidentiality to the Census Bureau. This accomplishment assisted the Census Bureau in improving the development of its Master Address File.
- The identification of vacant housing units by using USPS endorsements on census mail pieces.
- A collaborative geographic effort which provided the USPS with complimentary copies of all new TIGER/Line File releases and products containing demographic information. These files served as the foundation for a USPS geographic data base.

Throughout the decade the USPS/Census Joint Committee functioned in a supportive, informative, collaborative role. The planning for Census 2000 began in earnest in 1998 when the liaisons from both agencies met on a monthly basis as a committee to coordinate all Census/USPS operations and communicate Census 2000 management decisions. This committee also acted in a liaison capacity when print contractors requested exceptions to the USPS Domestic Mail Manual requirements. All questions and exceptions were directed through the committee liaisons to the appropriate management in either the Census Bureau or the USPS.

The following USPS/Census operations were included in the Census 2000 operations plan due to the cooperative effort of the USPS/Census Joint Committee liaisons.

Print Contractor Load Plans

The USPS worked very closely with each of the Census 2000 print contractors to develop a load plan for each mail piece. The print contractors prepared pallets of

Census 2000 advance letters, questionnaires, and reminder post cards according to USPS specifications to ensure proper timely delivery and accurate accounting. Printed mail pieces were sorted, placed in trays or banded into bundles, palletized, shrink wrapped by pallet, and loaded onto USPS tractor trailers. Those pallets containing addressed Census 2000 mail scheduled to be delivered to the greatest distance from the print contractor's plant were loaded first onto USPS trailers. Mail pieces with addresses local to the print contractor's warehouse were loaded last.

The USPS transported the prepared pallets either by truck, rail, or air (depending on the final destination). The Puerto Rico and Island Areas shipments were arranged as a drop shipment with sufficient lead time to ensure the mail piece arrival at the respondents' homes according to the Census 2000 delivery schedule.

DELIVERY SCHEDULES

The USPS and Census Bureau worked closely to determine a time schedule that allowed between 95 and 115 million mail pieces (per mailing) to be delivered at the respondents' address on the dates determined by the Census Bureau. A delivery schedule for each mailing (advance letter, mailout/mailback questionnaire, and reminder postcard) was prepared containing the following information:

- Specific dates for the mail piece to be picked up from the print contractor
- A USPS transportation plan that included routing the mail pieces through bulk mail facilities to avoid overwhelming local post office operations
- A tray and pallet placard system that designated a transportation route and delivery date
- A USPS schedule for delivery that accommodated the Census designated in-home delivery across the entire United States.

UNDELIVERABLE-AS-ADDRESSED (UAA) REDISTRIBUTION

This operation was a cooperative effort between the Census Bureau and the U.S. Postal Service to attempt redistribution of a portion of the estimated 9 million questionnaire packages that the U.S. Postal Service could not deliver because of incorrect ZIP codes, lack of residential delivery in the area, or other reasons. Instead of returning all of these packages to the Census Bureau's return address at the National Processing Center, the Census Bureau's Field Division identified approximately 70 USPS postal facilities that held the packages with pre-identified ZIP codes through March 18, 2000, for pick up by the local census offices. The local census offices redistributed 1.6 million of the 3.9 million packages held by the selected postal facilities to individual households.

BUSINESS REPLY MAIL (BRM) PERMIT ACCOUNTS

The Census Bureau's Administrative and Customer Services Division (ACSD) worked with the U.S. Postal Service to set up the BRM postage accounts and permits for Census 2000 mail returns to the Data Capture Centers (DCCs). A USPS Trace Sample Test was designed to test the effectiveness of the USPS mail delivery system relative to the specific ZIP Codes established for short and long form mailout/mailback questionnaires. A Census Bureau/USPS agreement was signed outlining the method of producing accurate BRM postage costs. This operation involved using the mail return check-in counts from each DCC that were broken down by short and long form and Be Counted questionnaire totals. These figures were then compared to the USPS truckload estimates that are detailed only by number of USPS trays (short forms) and USPS tubs (long forms). These estimates were much higher than the actual return rate due to non-census and misdirected mail that is mixed in with census mail returns coming into each DCC.

MILESTONES

March 3, 2000	Completed questionnaire printing and addressing for mailing
March 1-3, 2000	Advance letter mailout (update/leave Addresses)
March 6-8, 2000	Advance letter mailout (mailout/mailback addresses)
March 13-15, 2000	U.S. Postal Service delivered a questionnaire to every mailout/mailback address
March 20-22, 2000	Reminder postcard mailout (mailout/mailback addresses)
March 27-29, 2000	Reminder postcard mailout (update/leave addresses)

December 2000

United States
Census
2000

Section VI.

Address List
Development and
Review/Update

VI.A. ADDRESS LIST DEVELOPMENT

OBJECTIVE

The Census Bureau constructed a complete list of living quarters (addresses or location descriptions) to use for questionnaire delivery and to control the collection and tabulation of Census 2000 data.

MAJOR FEATURES

To enumerate and tabulate Census 2000, the Census Bureau identified all living quarters and located these living quarters with respect to the geographic entities for which we report data. The Census Bureau accomplished this by creating and maintaining a Master Address File (MAF) that identifies all living quarters and by spatially locating those addresses using our geographic database called TIGER (Topologically Integrated Geographic Encoding and Referencing). The building and maintenance of the MAF and TIGER involved partnerships with other federal agencies; state, local, and tribal governments; regional and metropolitan planning agencies; the private sector; and nongovernmental organizations.

For Census 2000 to be as accurate, complete, and cost effective as possible, the address list that serves as the basic control for the census must be as accurate and complete as possible. If an address is not on the list, then its residents are less likely to be included in the census. The inventory of all living quarters includes addresses or location descriptions for each housing unit and each group quarters. Except where the address list is created at the time of enumeration (for list/enumerate areas), each listing must have a complete address that can be used for mailing a census questionnaire or a location description that can be used by an enumerator to locate the living quarters. Each listing was linked to the TIGER database.

We created and maintained the MAF through a series of operations. Different operations were aimed at areas with city-style addresses and areas without city-style addresses.

In areas where most mailing addresses are city-style (for example, 101 Main Street), the Census Bureau:

- C Created the MAF by combining addresses from the 1990 Census Address Control File (ACF) with addresses in the U.S. Postal Service (USPS) Delivery Sequence File (DSF). The 1990 Census ACF is a nationwide file of addresses for all living quarters included in the 1990 census. The DSF is a national file of

individual mail delivery point addresses. As part of a cooperative agreement, the USPS provided the Census Bureau with updated DSFs on a regular basis.

- C Located these addresses in the TIGER database. Where an address could not be located, the location was researched and resolved through an office or field operation or through assistance from local partners. As a result of this research, new features were identified and address ranges were corrected and added to the TIGER database. (See section VII).

In areas where most mailing addresses were not city-style (for example, a post office box or rural route number) we needed to determine where the housing units were located in order to send an enumerator. Areas were identified for different enumeration methodologies using information on the types of mail delivery, the types of addresses, and our regional offices' knowledge of the areas. The address list was created in these areas during:

- C **Address listing operations.** In areas where the addresses were predominately not city-style, the Census Bureau created an address list through a door-to-door canvassing operation and identification of the location of each structure on census maps. The completed address listings and their map locations were recorded in digital format and added to the MAF and TIGER databases, respectively. Enumerators left addressed census questionnaires, which residents completed and mailed back, during an update/leave operation (enumerators also updated the address list and census maps during this operation). Where there was no mailing address for the listing or the mailing address is a noncity-style address, the listing included a location description.
- C **List/enumerate operations.** Census enumerators created the address list at the time of enumeration while canvassing their assignment areas and conducting interviews with respondents. The completed address listings and their locations recorded on a census map were added to the MAF and TIGER databases.
- C **Map update operations.** Before the address listing operation, the Census Bureau worked with local and tribal government partners to update the streets and roads in the TIGER database, especially for high-growth areas and areas with new street names. Updating the TIGER database for these areas made the address listing more efficient and helped ensure that living quarters were not missed.

We incorporated local knowledge to update the MAF through the Local Update of Census Addresses (LUCA) and the New Construction program. (See sections VI.C and VI.F).

A separate operation built an inventory of all special places such as nursing homes and colleges. The Census Bureau interviewed an official at each special place using a Special Place Facility Questionnaire. The responses to the questionnaire identified each group quarters and any housing units associated with the special place. The group quarters and any housing units were classified according to whether they would be enumerated as part of special place enumeration or through regular enumeration. The group quarters and housing units were added to the MAF and linked to the TIGER database. Local and tribal governments had an opportunity to review the special place address list and to add any special places that were missing.

In city-style address areas, the Census Bureau introduced two operations as a result of the reengineering effort to improve the quality of the MAF. The Census Bureau conducted a 100 percent block canvass to ensure consistently good address coverage in the MAF and to ensure correct geographic locations for all addresses. As a result of concerns from local and tribal governments that housing units built between the February 2000 postal update of the MAF and Census Day would not be included in the census, the Census Bureau conducted a New Construction program in which local and tribal governments provided addresses for housing units that were built and missing from the address list up to Census Day, April 1, 2000. The Census Bureau also updated the MAF with several USPS files.

MILESTONES

September 1997	Determined areas for different enumeration methodologies
January-May 1998	Conducted the Map Update program for areas without city-style addresses
May 1998-September 1999	Conducted the LUCA program for city-style address areas
July 1998-May 1999	Conducted address listing operations (except list/enumerate)
January-October 1999	Conducted the LUCA program for address listing areas
January-May 1999	Conducted 100 percent block canvassing
July-August 1999	Delivered first nationwide MAF for Census 2000
December 1999-April 2000	Conducted the LUCA Special Place program

December 2000

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January-April 2000

Conducted the New Construction program for city-style address areas

September 1999-May 2000

Updated the MAF with USPS files

May 2000

Completed MAF/TIGER integration for areas with mail delivery to city-style addresses

December 2000

VI.B. ADDRESS LISTING

OBJECTIVE

The Census Bureau developed the Census 2000 address list in areas of predominantly noncity-style addresses.

MAJOR FEATURES

- C Census enumerators canvassed their assignment areas and listed each living quarters, recorded its mailing address and described its physical location. The enumerators identified the approximate location of each structure containing living quarters by placing a spot on a census map, and updated the information on their maps.
- C The Census Bureau converted the addresses and updated maps into computer readable form. As address listings were completed, the Census Bureau data captured the address information in a keying operation. Address listing maps were scanned to produce computer readable images of the map spots and map information updates. In the final data capture step, the map spots and updated map information are entered into the TIGER database.
- C The Master Address File (MAF) was created for the listed areas from the address information identified and captured during the address listing operation.

MILESTONES

January-May 1998	Conducted map update operation (local governments' contributions)
February-June 1998	Updated TIGER database
July 1998-May 1999	Conducted address listing operation
December 1998-June 1999	Added addresses to the MAF and map corrections to TIGER
January-October 1999	Conducted the Local Update of Census Addresses program for address listing areas

December 2000

VI.C. LOCAL UPDATE OF CENSUS ADDRESSES PROGRAM

OBJECTIVE

The Census Bureau created partnerships with local and tribal governments to improve the Census 2000 address list for their jurisdictions.

MAJOR FEATURES

The Local Update of Census Addresses (LUCA) program, also known as the Address List Review program, was a partnership program that allowed the Census Bureau to benefit from local knowledge in developing its Master Address File (MAF). Participants contributed to a more complete and accurate census for their area.

The LUCA program was made possible by the Census Address List Improvement Act of 1994 (Public Law 103-430) which, for the first time, authorized designated representatives of local and tribal governments to review the MAF. The program operated as follows:

- C The local or tribal government designated a liaison to review the portion of the MAF covering the area under its jurisdiction. The liaisons were subject to the same restrictions prohibiting the disclosure of census information as are census workers. The address list is confidential under Title 13 and participants must sign an oath promising to protect the confidentiality of the addresses.
- C The Census Bureau sent the liaisons listings from the MAF (in either paper or computer readable form for housing unit addresses, paper form only for special place addresses), corresponding maps, and a tally of MAF records for each census block in their jurisdictions.
- C In city-style address areas, the liaison provided input regarding individual addresses on the list, as well as addresses missing from the list that should be added. The Census Bureau verified this input and provided feedback to the participants about the results.
- In address listing areas, the liaisons provided input regarding the completeness and accuracy of the housing unit counts for each block. The Census Bureau relisted the addresses in blocks identified as having a different number of housing units and provided feedback about the number of housing units found.
- For special place addresses in both city-style and noncity-style areas, the liaison provided input regarding individual addresses on the list, as well as addresses missing from the list that should be added. The Census Bureau reviewed the input

and added any valid special places to the Special Place/Group Quarters operations.

- P.L. 103-430 allowed the local and tribal participants to appeal final Census Bureau decisions on housing unit addresses. For special place addresses submitted by participants, there was no appeal process.
- C The Census Bureau conducted the program during three distinct time periods, which corresponded to the time schedule for developing the MAF. For areas with predominantly city-style mailing addresses, participants began reviewing the address list in May of 1998 because the MAF had been created using addresses obtained from the 1990 census and the USPS. For other areas, the address list was not available for review until 1999, after the Census Bureau completed the address listing operation to create the MAF in their areas. These areas did get an early start by reviewing and updating maps for their communities in early 1998; this activity benefited the Census Bureau's later address listing work by yielding more up-to-date street information for reference by the address listing field staff. For special place addresses, participants began their review in December 1999 after the MAF had been updated with special place/group quarters addresses.
- C There was no LUCA program in remote or sparsely settled areas because we compiled address lists during enumeration.

MILESTONES

City-Style Address Areas

February 1998	Mailed invitation letters for address list review to local and tribal governments
May 1998-September 1999	Local and tribal governments conducted review
September 1998-October 1999	Provided preliminary feedback to participants
July-October 1999	Verify participants' inputs
October 1999-February 2000	Provided specific address feedback to participants
November 1999-March 2000	Local and tribal governments participated in LUCA appeals process

Address Listing Areas

January 1998	Mailed invitation letters for map review to local and tribal governments
January-May 1998	Local and tribal governments conducted map review

December 2000

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September-October 1998	Mailed invitation letters for address list review to local and tribal governments
January-October 1999	Local and tribal governments conducted review
September 1999-February 2000	Provided feedback to participants
October 1999-March 2000	Local and tribal governments participated in LUCA appeals process

Special Place Addresses Areas

November 1999	Mailed invitation letters for special place address list review to local and tribal governments
December 1999-April 2000	Local and tribal governments conducted review
January-April 2000	Participants submitted input for inclusion in Special Place/Group Quarters operations

December 2000

VI.D. BLOCK CANVASSING

OBJECTIVE

The Census Bureau ensured the completeness and accuracy of the Census 2000 address list for areas having predominantly city-style addresses used for mail delivery by dependent canvassing of the initial Master Address File (MAF).

MAJOR FEATURES

- C Census enumerators canvassed every road and street looking for every place where people live, stay, or could live, comparing the address of each living quarters with the addresses on the Census 2000 address list. They added addresses missing from the address list, deleted addresses on the address list that duplicate other addresses or did not exist on the ground, and ensured all addresses were assigned to the correct geographic location. The enumerators also updated census maps with information about the location and names of the roads and streets.
- C The Census Bureau converted the new and corrected address and map information into computer readable form. As block canvassing was completed, the Census Bureau data captured the address updates in a keying operation and entered the updated map information into the TIGER database.
- C The Master Address File was updated with the results of the block canvassing in time to use the updated address information for delivery of questionnaires.

MILESTONES

January-May 1999	Conducted block canvassing
February-July 1999	Updated the MAF and TIGER

December 2000

VI.E. POSTAL VALIDATION CHECK

OBJECTIVE

The Census Bureau updated its list of city-style mailing addresses via automated means, using current USPS files of delivery addresses newly identified by letter carriers, in lieu of a manual casing check. The Postal Validation Check (PVC) methodology consisted of supplementing the Census 2000 address list for city-style areas, updated by Block Canvassing and the Local Update of Census Addresses Program (LUCA), with two special USPS “refreshes” of the Delivery Sequence File (DSF) before January 2000. These addresses were added to the Master Address File (MAF) through existing and established geocoding and updating methodologies. The additional geocoded addresses from these refreshes were included on the supplemental tape for the questionnaire labeling contractor. In February 2000, the Census Bureau received a file from USPS of supplemental added addresses in time to be included in the census process. These addresses were processed and included, as time permitted, in the questionnaire mailout through the labeling operation in the Census Bureau’s National Processing Center (NPC), with any residual included in the Nonresponse Followup operation.

MAJOR FEATURES

- C The Census Bureau received new addresses from an updated DSF from the USPS.
- C The Census Bureau added the new addresses from the updated DSF to the MAF.

MILESTONES

November 1999	Received USPS November DSF and added new addresses to the MAF.
February 2000	Received USPS delivery of added addresses since the November DSF and added new addresses to the MAF.
March 2000	Provided new addresses for the March questionnaire mailout.

December 2000

VI.F. NEW CONSTRUCTION PROGRAM

OBJECTIVE

For city-style address areas, the Census Bureau obtained addresses of housing units for which basic construction was completed (closing the structure from the elements) by Census Day, April 1, 2000, through a partnership with local and tribal governments.

MAJOR FEATURES

The New Construction program was implemented based on concerns raised by local and tribal governments that Census 2000 would miss addresses in city-style address areas that were added after the Block Canvassing operation and the U.S. Postal Service delivery sequence file updates. The program operates as follows:

- The local or tribal government designated a liaison to review the portion of the Master Address File (MAF) covering the area under its jurisdiction. The liaisons were subject to the same restrictions prohibiting the disclosure of census information as are census workers. The address list is confidential under Title 13 and participants must sign an oath promising to protect the confidentiality of the addresses.
- The Census Bureau sent the liaisons listings from the MAF (in either paper or computer readable form), corresponding maps, and a tally of MAF records for each census block in their jurisdictions.
- The liaison provided input on addresses that were missing from the list, including those that were built, i.e., for which basic construction was completed, by April 1, 2000. The Census Bureau defines basic construction as closing the structure and having it protected from the elements, i.e., having a roof, windows, and doors in place.
- The Census Bureau matched the addresses provided by the participants to addresses on the MAF. The Census Bureau added addresses that did not match to the MAF.
- Census enumerators verified that a housing unit exists for the address on Census Day and enumerated the occupants during the Coverage Improvement Followup operation.

MILESTONES

October 1999	Mailed invitation letters for New Construction program to local and tribal governments
January-April 2000	Local and tribal governments provided added addresses
May-June 2000	Matched and unduplicated adds and updated the MAF
July-August 2000	Verified and enumerated adds

December 2000

United States
Census
2000

Section VII.
**Geographic
Database
Development -
TIGER**

VII. GEOGRAPHIC DATABASE DEVELOPMENT-TIGER

OBJECTIVE

The Census Bureau provides the necessary information to link each living quarters in Census 2000 to a spatial location, each location to a specific geographic area, and each geographic area to the correct name or number and attributes.

MAJOR FEATURES

The geographic database for the census—the TIGER (Topologically Integrated Geographic Encoding and Referencing) system— provides the geographic structure for the control of the data collection, tabulation, and dissemination operations.

The geographic database constantly changes. Not only are new streets built, but some streets cease to exist, and the paths of some existing streets move. The names and address ranges associated with these streets change, too. Not only is the inventory of geographic entities different from year to year, but the boundaries, names, and related attributes for the entities also may change.

To ensure that the information in the TIGER database is complete and correct, the Census Bureau works in partnership with other federal agencies; state, local, and tribal governments; and others in the public and private sectors. We maintain the TIGER database through internal programs and partnership activities.

The Census Bureau obtains updates to the feature network, including associated address ranges, through the following operations:

- C **Census Master Address File (MAF) building activities.** These include office resolution of addresses that cannot be automatically spatially located and the various address-list improvement operations.
- C **Partnership MAF building activities.** These include the LUCA (Local Update of Census Addresses) program and local participation in the resolution of addresses that need to be spatially located.
- C **Digital files.** Local and tribal governments with suitable digital files provide them to the Census Bureau in lieu of a manual updating process. We transfer the update information from the local file to the TIGER database by an automated process.
- C **Local and tribal governments.** In response to a preview of the census map of their jurisdiction, local and tribal governments may furnish the Census Bureau with updated street features and names.

We obtain updates to the boundaries, names, and attributes of the various geographic entities for which we tabulate data through various methods. These include:

- C A voluntary survey designed to collect an accurate inventory of all functioning governmental units and to obtain up-to-date information on boundary changes.
- C A program that provides the highest elected official of each functioning governmental unit with a copy of the census map that shows the jurisdiction boundaries we plan to use to tabulate Census 2000. The local or tribal official reviews and validates these boundaries. This program replaces the local review of boundaries portion of the 1990 Post-Census Local Review Program.
- C A program that provides local and tribal participants the opportunity to delineate Census 2000 participant statistical areas (block groups, census county divisions, census designated places, and census tracts).
- C Additional programs that offer participants the opportunity to identify other areas for which the Census Bureau will tabulate data (for example, traffic analysis zones).

The Census 2000 boundaries for functioning governments and other legal entities are those legally in effect on January 1, 2000. Where the boundaries for any geographic entity intersect a feature, the Census Bureau assigns any addresses associated with that feature to the geographic entity. The LUCA and boundary collection and validation programs also provide participants with the opportunity to review the assignment of addresses in their jurisdiction.

The information from all these programs and operations is inserted into the TIGER database where it is processed and undergoes various checks for consistency and accuracy. As required by specific census operations, the Census Bureau generates extracts from the TIGER database to produce the necessary map products and geographic files.

MILESTONES

January 1998	Began survey to collect January 1, 1998 boundaries
January 1999	Began survey to collect January 1, 1999 boundaries
November 1999	Began survey to collect January 1, 2000 boundaries
April 2000	Began conducting final boundary validation
October 2000	Established geographic structure for tabulation

December 2000

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Census
2000

Section VIII.
Field Office
Infrastructure
and Staffing

VIII.A. FIELD OFFICE INFRASTRUCTURE AND STAFFING

OBJECTIVE

The Census Bureau developed an effective and cost-efficient infrastructure that supported complete and accurate enumeration in Census 2000 and the capture and processing of census information in time to meet constitutional and legislative requirements.

MAJOR FEATURES

Because the decennial census requires a massive mobilization of human and physical resources, the Census Bureau developed an extensive temporary office infrastructure across the country to conduct Census 2000.

Physical Infrastructure

The major physical infrastructure components and their functions are listed below.

Regional Census Centers (RCCs) - 12 stateside centers (and an area office in Puerto Rico)

- C Manage all census field data collection operations, address listing, and address list enhancement for city-style address areas through a network of Census Field Offices (CFOs) and Local Census Offices (LCOs)
- C Coordinate the Local Update of Census Addresses program
- C Produce maps
- C Conduct geographic activities such as geocoding, updating the TIGER (Topologically Integrated Geographic Encoding and Referencing) database, and working with local participants on the participant statistical programs and the Public Law 94-171 Redistricting Data Program
- C Recruit temporary staff
- C Manage payroll and personnel administrative system

Census Field Offices (CFOs) - (402 Offices)

- C Perform address listing
- C Conduct local recruiting
- C Perform clerical review of completed field address listing work

Local Census Offices (LCOs) - 520 Offices

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- C Produce enumerator maps and assignments
- C Conduct local recruiting
- C Conduct outreach and promotion (for example, the Questionnaire Assistance Center program)
- C Conduct group quarters/special place/service-based enumeration operations
- C Coordinate military enumeration (if applicable)
- C Conduct update/leave operation (if applicable)
- C Conduct list/enumerate operation (if applicable)
- C Conduct field followup operations (nonresponse followup, coverage improvement followup, address verification)
- C Manage field staff payroll and personnel administrative system
- C Perform block canvass operation (early opening LCOs)

National Processing Center (NPC) in Jeffersonville, Indiana

- C Process address listing
- C Check in questionnaires
- C Prepare questionnaires
- C Conduct data capture
- C Code responses on questionnaires
 - Assemble and ship kits for field operations
 - Conduct telephone questionnaire assistance
- C Conduct coverage edit by telephone
- C Manage payroll and personnel administrative system

Other Data Capture Centers (DCCs) - Phoenix, Arizona; Pomona, California; and Essex in Baltimore County, Maryland

- C Check in questionnaires
- C Prepare questionnaires
- C Conduct data capture
- C Manage payroll and personnel administrative system

Establishing the above offices involved the following activities:

- C Leasing office space
- C Obtaining furniture, equipment, and supplies
- C Procuring and installing computer hardware and software (except for CFOs)
- C Establishing voice and data line connections

Administrative Infrastructure

In addition to a physical infrastructure, there are administrative structure requirements that must be in place to recruit, manage, and pay the census workers.

These functions consist of the following:

- C Development of a system of competitive pay rates
- C Development of position descriptions
- C Validation of selection aid test
- C Implementation of the Decennial Automated Name Check system for applicant background screening
- C Implementation of the Preappointment Management System/Automated Decennial Administrative Management System to handle the hiring of temporary census workers and to manage the payroll system

MILESTONES

November 1997 - March 1998	Opened RCCs
June - September 1998	Opened CFOs
September 1998 - November 1999	Opened LCOs (Early opening LCOs September through November 1998; remainder of LCOs by November 1999)
April - September 1999	Opened DCCs
October 1998 - January 1999	Closed CFOs
August - October 2000	Closed LCOs
December 2000 - February 2001	Close DCCs
June - July 2001	Close RCCs

VIII.B. FIELD OFFICE STAFFING

OBJECTIVE

The Census Bureau had to recruit and train a sufficient number of temporary census workers to complete Census 2000 operations on schedule.

MAJOR FEATURES

A decennial census is the largest peacetime activity undertaken by the federal government. The Census Bureau recruits and tests people for a wide range of positions, such as local census office managers, enumerators, partnership specialists, media specialists, and clerks. This effort requires a large recruiting effort throughout the country.

Every job applicant had to pass a written test and meet certain other requirements before being hired as a census worker. The Census Bureau used the Decennial Applicant Name Check (DANC) system to screen all applicants for criminal histories. Qualified applicants who were selected were required to take the oath of office and sign an affidavit of nondisclosure in which they agreed they would “not disclose any information contained in the schedules [questionnaires], lists, or statements obtained for or prepared by the Bureau of the Census, to any person or persons either during or after employment.”

The Census Bureau recognized the changing composition of the labor force and the increasing difficulty of hiring and training a sufficiently large number of temporary census workers, especially enumerators, to conduct the census. We made these changes for Census 2000:

- C We implemented innovative methods of setting pay for persons to work on Census 2000.
- C We expanded the labor pool from which we can recruit by negotiating with other federal and state agencies that manage retirement and income transfer programs (federal civilian and military retirement, Public and Indian Housing program, Welfare to Work, and so on) to reduce any barriers and encourage recipients of the various programs to work for the Census Bureau.
- C We expanded enumerator training for Census 2000 with a focus on early supervisor review and feedback.

MILESTONES

January 1997	Began DANC system
June 1998	Began recruiting for census field offices

December 2000

United States
Census
2000

Section IX.

Data Collection

IX.A. BASIC ENUMERATION STRATEGY

OBJECTIVE

The Census Bureau's goal was to obtain a completed questionnaire for every housing unit in Census 2000.

MAJOR FEATURES

To ensure that we obtain a completed questionnaire from every housing unit, the Census Bureau must first make sure that a questionnaire was delivered to every housing unit. We accomplished this by using one of the following three basic data collection methods:

- C **Mailout/mailback.** The Census Bureau used U.S. Postal Service (USPS) letter carriers to deliver questionnaires to the vast majority of housing units that have city-style addresses (house number and street name).
- C **Update/leave.** In areas where the addresses used for mail delivery are predominantly noncity-style, enumerators left addressed census questionnaires at each housing unit for the householder to complete and mail back. They also updated and made any necessary corrections and/or additions to their maps and their address lists as they delivered the questionnaires.
- C **List/enumerate.** In very remote or sparsely populated areas, enumerators visited each housing unit and completed a short form or long form census questionnaire. They also developed an address list for the area and spotted the housing unit's location on a map.

Additional data collection strategies noted in the following sections cover enumeration of special population groups (for example, persons in group quarters and on military bases), people with no usual residence, and nonresponse followup of housing units that did not return a questionnaire.

MILESTONES

March 2000	Delivered initial mailout/mailback questionnaires
March 2000	Conducted update/leave operation
March-May 2000	Conducted list/enumerate operation

December 2000

IX.B. TELEPHONE ASSISTANCE AND THE INTERNET

OBJECTIVE

The Census Bureau provided respondents with convenient access to obtain assistance in the completion of their Census 2000 questionnaires or to respond directly to the census.

MAJOR FEATURES

- C The Census Bureau contracted for an extensive Telephone Questionnaire Assistance (TQA) operation to:
 - Answer questions about the census questionnaire so that respondents could complete it and mail it back.
 - Offer a means for callers to respond directly to the census if they have difficulty reading or understanding the questionnaire.
 - Allow respondents who did not receive a questionnaire to request that one be mailed to their home.
- This service had national toll-free numbers to support languages in English, Spanish, Chinese, Korean, Vietnamese, and Tagalog. Each language had a unique toll-free number. The English and Spanish numbers were printed on the questionnaires and used an automated touch-tone and voice recognition system that can handle a large number of calls concurrently. Operators recorded answers to the census short form over the telephone, when service was requested during telephone assistance. There also were TDD (Telephone Device for the Deaf) numbers available for the hearing-impaired.
- C Respondents also were able to access a census Internet website for assistance in completing the census questionnaire and, in some cases, for providing their responses to the census. Foreign language assistance guides were available on the Internet assistance website for the public to download. Respondents could submit their responses via the Internet if they provided a legitimate 22-digit, census short form identification number. We posted only an English-language, short form questionnaire for Internet reporting.

MILESTONES

December 1998	Awarded TQA contract
March-April 2000	Conducted Internet data collection
March-June 2000	Conducted TQA

December 2000

IX.C. BE COUNTED PROGRAM

OBJECTIVE

The Be Counted program provided a means for people to be included in Census 2000 if they believed they did not receive a census questionnaire or were not included on one. The Census Bureau placed particular emphasis on developing ways to include population groups that historically have been undercounted.

MAJOR FEATURES

Be Counted Questionnaire

The Be Counted questionnaire was designed to be respondent-friendly and easy to complete. It was intended for people who did not receive a questionnaire at their address, people who believe the returned questionnaire for their address excluded them, those who had no usual residence, and so forth. These forms contain short form questions along with several additional questions needed to process and match the forms to the census address file.

Questionnaires Available in Public Locations and in a Number of Languages

Be Counted questionnaires were made available at public locations, such as Questionnaire Assistance Centers and other places throughout the community. Sites were identified through consultation with our local partners.

The distribution of Be Counted forms began just before Census Day and ended before the nonresponse followup operation began.

Be Counted forms were printed in English, Spanish, Korean, Chinese, Vietnamese, and Tagalog.

MILESTONES

January 1999-February 2000	Identified appropriate Be Counted sites in consultation with local partners
February 1999	Advertised contract for printing of Be Counted questionnaires
August 1999	Began printing Be Counted questionnaires
April 2000	Conducted Be Counted Program

December 2000

IX.D. SPECIAL ENUMERATION PROCEDURES

OBJECTIVE

In Census 2000, the Census Bureau implemented a comprehensive set of procedures to enumerate people who did not live in traditional housing units. These included people who lived in group quarters situations (for example, nursing homes, group homes, and colleges), people without housing, people who lived at migrant and seasonal farm worker camps, people living on military installations and ships, and federal employees and their dependents living overseas. Special procedures also were applied to enumerate those who lived in unique areas of the country like remote Alaska.

MAJOR FEATURES

Special Place Facility Questionnaire Operation

Before we could enumerate people at these special locations, we had to first identify the group living quarters located at these places. Identification occurred on a flow basis, by means of a Special Place Facility Questionnaire Operation. This operation updated existing information for our inventory of special places and group quarters, identified additional group quarters, identified contact persons at each location, assigned a group quarters type code, determined availability of administrative records, identified any housing units at or associated with the special place or group quarters, and collected other administrative information. Most information about the group living quarters was collected during an automated Computer-Assisted Telephone Interview (CATI), but some of this information was completed by personal visit using a paper Special Place Facility Questionnaire.

Service-Based Enumeration

Service-Based Enumeration (SBE) was designed to enumerate people without conventional housing who may be missed in the traditional enumeration of housing units and group quarters. During SBE, we enumerated people at targeted non-sheltered outdoor locations, and those receiving services at emergency and transitional shelters, at soup kitchens, and at regularly scheduled mobile food van stops. Enumeration of the three phases of SBE (shelter, soup kitchen/mobile food van stops, and targeted non-sheltered outdoor locations) was conducted on three separate days at the end of March 2000.

Persons staying at shelters were counted at the shelter location. Persons enumerated at soup kitchens and mobile food van locations were counted at the enumeration location or at a usual address if they should provide one. Persons at targeted non-sheltered outdoor locations were counted at the enumeration location.

Group Quarters Enumeration

Staff in our local census offices conducted the group quarters enumeration. Starting in January 2000, census workers made advance visits to the group quarters to meet with facility staff and discuss the upcoming census enumeration. These visits were very beneficial because they promoted and encouraged participation in the census and identified any difficulties that might be encountered during the enumeration. In April 2000, census workers enumerated people in each group quarters by listing all the residents and distributing questionnaire packets. When needed, enumerators provided assistance in completing the questionnaires. Census Bureau staff verified the counts by comparing them to the Special Place Facility Questionnaire results and to facility administrative records. In addition, a systematic sample of group quarters were contacted to verify the data.

Some types of facilities, such as jails and prisons, self-enumerated their facility. These facilities used census procedures to conduct the enumeration, and the facility employees became special sworn census employees to protect the confidentiality of the census information.

Transient Night (T-Night) Operation

Transient night, commonly referred to as T-Night, was an operation designed to count persons living a mobile lifestyle on Census Day. T-Night took place on the day before Census Day (on Friday, March 31). T-Night enumerators visited and interviewed people occupying campgrounds at racetracks, recreational vehicle campgrounds or parks, commercial or public campgrounds, fairs and carnivals, and marinas. Every person enumerated during T-Night had the opportunity to report a usual residence.

On T-Night, enumerators visited each assigned T-Night place, met with a contact person at the site to explain the purpose of the visit, offered the Privacy Act notice, answered any questions, and verified information about the site. Then the enumerator completed a questionnaire for each unit, site, or boat slip in the living quarters at the assigned location.

Remote Alaska Enumeration

Several methods were used to enumerate the varied types of areas in Alaska. Several cities and their vicinities were designated as mailout/mailback areas due to their concentrated populations and city-style addresses. This included the two largest cities, Anchorage and Fairbanks, and selected smaller cities such as Sitka, Haines, and Juneau. The rest of Alaska was enumerated using the list/enumerate and update/leave methods, which were also used in the sparsely populated areas of the lower 48 states. The timing of the mailout/mailback, update/leave, and list/enumerate operations was the same as in other states. However, enumeration of the remote

areas, which was conducted using a modified form of the list/enumerate procedures, began earlier than the other operations.

Remote enumeration was unique to Alaska. Outlying or remote communities in Alaska range in population from a few people to several hundred persons. Roads rarely exist to link the widely scattered communities. Most of these communities, located throughout the state, are accessible only by small-engine airplane, snowmobile, four-wheel-drive vehicle, dogsled, or a combination thereof. Due to the sequential timing of the spring thaw (or “breakup” as it is known locally) across the state of Alaska, enumeration of the remote areas began in late January. The earlier timing for remote enumeration permitted travel to these areas during the period when conditions were most favorable. For example, the ground and rivers were still frozen so planes could fly in and out, and the residents were still at home. Once the spring thaw begins, travel to some of these areas is difficult or impossible, and the people leave home to fish and hunt. Enumerators must finish their work before then, or they miss a large part of the population. The enumeration was conducted in three waves and all census questions were asked in relation to Census Day (April 1).

Domestic Military/Maritime Enumeration

People living on U.S. military installations and maritime vessels were enumerated during Census 2000. To enumerate people residing on U.S. military installations and on military ships, the Census Bureau worked with the Department of Defense and the U.S. Coast Guard to identify housing units and other living quarters on the installations and ships assigned to a home port in the United States. Different enumeration methodologies, such as mailing census questionnaires to housing units on installations and enumerating people at their work station, were used. The Census Bureau worked with the U.S. Maritime Administration and others to identify maritime vessels in operation at the time of the census and mail enumeration materials to these vessels for completion.

Overseas Enumeration

The Census Bureau counted federal employees assigned overseas (including members of the Armed Forces) and their dependents in Census 2000 and included them in the apportionment counts. Also, we counted in the overseas population persons on board military ships assigned to a foreign home port. We asked the Department of Defense and other federal agencies to provide counts of their employees assigned overseas (and their dependents) by home state from personnel records of the agencies or other administrative records.

MILESTONES

November 1998-March 2000	Conducted Special Place Facility Questionnaire Operation
January 2000	Began enumeration in remote Alaska
January-February 2000	Conducted local knowledge update of special places and group quarters locations
February-March 2000	Conducted advance visits to special places/group quarters
February-July 2000	Federal agencies compiled overseas counts by home state
March 27, 2000	Conducted Shelter Enumeration
March 28, 2000	Conducted Soup Kitchen and Mobile Van Stop Enumeration
March 29, 2000	Conducted Targeted Non-Sheltered Outdoor Locations Enumeration
March 31, 2000	Conducted T-Night operation
April-May 2000	Enumerated people at group quarters, on military bases, and on military and maritime vessels

December 2000

IX.E. SPECIAL DATA COLLECTION METHODS FOR TARGETED AREAS

OBJECTIVE

The Census Bureau planned to overcome barriers to successful enumeration in Census 2000 by implementing special data collection methods in targeted areas.

MAJOR FEATURES

Special census methods and procedures were available for improving cooperation and enumeration in hard-to-enumerate areas. Areas were designated for the targeted methods, such as urban update leave (UUL), update/enumerate (UE), and team and blitz enumeration, that were used in Census 2000:

- The regional census centers used the planning database, consisting of a range of housing, demographic, and socioeconomic variables that are correlated with nonresponse and undercounting, in conjunction with their knowledge of local conditions to identify the most appropriate areas in which we used targeted methods designed to overcome difficult enumeration barriers.
- Blitz enumeration was used in areas where field conditions may have interfered with the timely completion of the enumeration. These conditions may have been high concentrations of multi-unit buildings, enumerator safety concerns, low enumerator production rates, and so forth. Crew enumerators went into a targeted area and conducted the enumeration in a short period of time.
- Team enumeration, during which a pair of enumerators worked together, was used in high crime areas where safety was a concern.
- In partnership with local and tribal governments and community-based organizations, the local census offices established Walk-in Questionnaire Assistance Centers in their communities (for example, in non-English speaking areas) to assist respondents in completing their questionnaires. These centers were established in community centers, large apartment buildings, and so forth.
- Assistance in various foreign languages was provided for people who were not able to respond to questionnaires in English or Spanish.

- A Be Counted program made unaddressed Be Counted questionnaires available in sites such as Walk-in Questionnaire Assistance Centers and other publicly accessible locations for pick up and completion by people who believe that they have not been counted in the census.
- Initial mail response rates and mapping capabilities were available to local and tribal officials periodically during the census enumeration. They worked in partnership with census staff to identify unexpectedly low response areas. Targeted enumeration efforts and additional outreach and publicity activities were then implemented.
- Letters were mailed to managers of large multi-unit structures and gated communities informing them of upcoming census operations. Posters were included for multi-unit managers to complete and post for residents to reference when completing housing information on long form questionnaires. Enumerators also handed security personnel at gated communities letters requesting access to the community.
- In pre-identified census blocks, the UE methodology was employed where census enumerators canvassed the area, updated the address list and maps, and completed census questionnaires for all occupied and vacant housing units.
- In pre-identified census blocks in urban areas such as public housing developments and other areas where the U.S. Postal Service might deliver a quantity of questionnaires to a building lobby, the Census Bureau employed a UUL method of enumeration. Census Bureau enumerators delivered questionnaires to each unit and updated the address list.

MILESTONES

March 2000	Opened Walk-in Questionnaire Assistance Centers
April 2000	Conducted Be Counted program

December 2000

IX.F. COVERAGE EDIT AND TELEPHONE FOLLOWUP

OBJECTIVE

The Census Bureau improved the coverage of persons in housing units in Census 2000.

MAJOR FEATURES

In Census 2000, a computer based coverage edit was performed to review Census 2000 questionnaires for count discrepancies and to identify large households. A separate telephone followup operation was conducted to resolve identified coverage edit failures.

For mail-return and Internet questionnaires, the coverage edit was performed as follows:

- C Completed questionnaires were checked for discrepancies between the number of persons reported as members of a household and the number of persons for whom census information was provided on the form. For example, the respondent may have indicated that five people lived in the housing unit, but there was information for only two people.
- C Other questionnaires that would fail edits included forms returned by mail or Internet where the population count is blank and the number of persons reported within the questionnaire is exactly six, and mailed or Internet forms with household person counts of seven or more (the questionnaire has space to report population data for a maximum of six persons).
- C To resolve these discrepancies in the questionnaires, telephone agents, employed by a Census Bureau contractor and under the direction of Census Bureau personnel, called the households.

Similarly, questionnaires completed by enumerators during the nonresponse followup operation were reviewed to ensure that the data were collected for all persons reported as living at the address.

The coverage edit should not be confused with the content edit (which is for missing or incomplete responses to population or housing items). The content edit in Census 2000 was completed solely by computer, that is, by statistical imputation, with no telephone or personal visit followup.

MILESTONES

March-June 2000	Identified mail-return and Internet housing units requiring coverage edit followup
May-July 2000	Conducted coverage edit followup operations
April-July 2000	Conducted coverage edit review of enumerator-return questionnaires

December 2000

IX.G. NONRESPONSE FOLLOWUP STRATEGY

OBJECTIVE

The Census Bureau made every effort to secure a response in Census 2000 from every resident and every housing unit. The Census Bureau conducted a field or telephone followup of housing units that did not return their questionnaires by mail. This operation was known as nonresponse followup (NRFU). One hundred percent of nonresponding households were followed up to obtain a completed questionnaire for each one of them.

MAJOR FEATURES

- C During the initial response period (the period immediately before and immediately after Census Day), the Census Bureau disseminated reminder publicity urging people to return their questionnaires.
- C Following a period of mail response check-in, nonresponding households were identified and the followup lists generated.
- C Enumerators performed NRFU at all nonresponding addresses. They obtained a completed questionnaire for each household.
- C In mailout/mailback areas, enumerators also followed up 100 percent of the housing units identified as nonexistent or vacant by the U.S. Postal Service.
- C In update/leave areas, enumerators also followed up 100 percent of the vacant and nonexistent housing units where the Census Bureau was unable to deliver questionnaires during the update/leave operation.
- C The Census Bureau implemented a number of quality assurance checks of NRFU to ensure the completeness and accuracy of the operation. Crew leaders conducted a coverage edit of 100 percent of the questionnaires, with failures being revisited and/or corrected. Interviewing results for key data items from each assignment area were compared with expected values for the area and anomalies were identified for review. In addition, a systematic sample of addresses were reinterviewed by telephone or personal visit to identify entire enumerator assignments that needed to be reworked. And, at any time, the office operations supervisor may select additional cases for reinterview for an enumerator's work they find suspect.

MILESTONES

April-July 2000

Conducted NRFU

December 2000

IX.H. COVERAGE IMPROVEMENT FOLLOWUP

OBJECTIVE

After nonresponse followup, the Census Bureau carried out an additional operation to further improve the coverage of housing units and persons.

MAJOR FEATURES

This operation included a followup of seven types of addresses:

- Addresses for which questionnaires were returned during the nonresponse followup (NRFU) operation reporting the housing unit as vacant or delete and which were not confirmed by the U.S. Postal Service as undeliverable as addressed.
- Addresses added during the update/leave and urban update/leave questionnaire delivery operations for which a mail return had not been received.
- Addresses delivered in periodic updates from the United States Postal Service that had not been enumerated in previous operations.
- Addresses provided by local and tribal governments through the New Construction Program.
- Addresses provided by the Local Update of Census Addresses appeals process that had not been enumerated in previous operations.
- Addresses in certain panels of the Response Mode and Incentive Experiment Program in which we did not receive a census questionnaire.
- Addresses from mail returns checked in but for which no data were captured (i.e., lost or blank forms).

Census staff visit each address, determine the status of the address as of Census Day, and enumerate as appropriate. Both short and long form data are collected.

MILESTONES

July-August 2000 Conducted Coverage Improvement Followup

December 2000

IX.I. RESOLUTION OF MULTIPLE RESPONSES

OBJECTIVE

When more than one questionnaire data set was collected for a census address, the Census Bureau reviewed all information received for that address and defined the data set that will represent the housing unit.

MAJOR FEATURES

One of the main goals of Census 2000 was to make it simpler for people to be counted. In addition to our standard enumeration methodology for an area (for example, mailout/mailback data collection), other responses were acceptable as follows:

- Be Counted forms (unaddressed short form questionnaires) were made available in public places.
- Non-English language forms were provided upon request.
- Responses to the census were accepted over the telephone during Telephone Questionnaire Assistance.
- Internet responses were accepted.
- Late mail returns were received and processed.

Providing these response options made it easier for persons to be counted but increased the possibility that more than one response could be submitted for a given person or a household.

We use automated matching technologies to resolve situations where more than one form was received for an address. Every housing unit address in the census has a unique identifier, the census ID number. When responses were received that did not have an ID (for example, Be Counted forms), they were linked to an address in the MAF and a census ID is assigned. We then determined when multiple returns had been captured for any ID. Matching rules were used to identify records that most likely refer to the same person and strict criteria were used to decide what information was included in the census.

MILESTONES

December 1999

August-September 2000

Finalized plans for resolution of multiple responses

Conducted multiple response resolution

December 2000

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Section X.

**American Indian
and Alaska Native
Areas and
Hawaiian
Home Lands**

X. AMERICAN INDIAN AND ALASKA NATIVE AREAS AND HAWAIIAN HOME LANDS

OBJECTIVE

The Census Bureau conducted the best possible enumeration in Census 2000 of American Indian and Alaska Native Areas (AIANA) and Hawaiian Home Lands.

MAJOR FEATURES

The Census Bureau bases its strategy for enumerating the populations in AIANA and in Hawaiian Home Lands on building partnerships for:

- C Address list development
- C Geographic programs
 - Outreach and Promotion
- C Field operations
- C Data collection methodologies
- C Data dissemination

Address List Development

In areas where the U.S. Postal Service (USPS) delivers mail to city-style addresses, we use the USPS Delivery Sequence File to build the address list and use the mailout/mailback methodology for enumeration. In other areas, we conduct an address-listing operation prior to the census and use the update/leave methodology. In this operation, the enumerator leaves the form for the respondent to return by mail and as needed, updates the address list. In more remote areas, we use the list/enumerate methodology (for remote Alaska enumeration, see section IX.D), which involves the enumerator listing the housing unit and conducting the census interview in one visit. Tribal governments have an opportunity to review the address lists for their jurisdictions as part of the Local Update of Census Addresses program. (See section VI.C.)

Geographic Programs

Table X-1 shows the wide diversity of programs the Census Bureau offers American Indian tribes, Alaska Native areas, and Hawaiian Home Lands to review and define geographic areas.

Outreach and Promotion

The Census Bureau developed paid advertising specifically targeted to the American Indian, Alaskan Native and Native Hawaiian audiences. Promotional materials were

developed with these populations in mind. In addition, the Census Bureau worked with tribal leaders and encouraged them to appoint tribal liaisons to lead Census 2000 promotional efforts that were appropriate to their particular tribal government. (See section IV.)

Field Operations

The Census Bureau sought the support and assistance of American Indian, Alaskan Native and Native Hawaiian partners in implementing the following activities:

- C Provide local office space for testing and training
- C Participate in training local census office staff (such as in cultural awareness)
- C Assist in recruiting strategies for filling census jobs and identifying local referrals for assistance
- C Assist and advise census field staff about potential problem situations
- C Attend and participate in periodic census/tribal staff meetings
- C Identify sites for Questionnaire Assistance Centers
- C Identify locations for distributing Be Counted questionnaires

Data Collection Methodologies

The Census Bureau worked with tribal officials to select the appropriate data collection methodology or combination of methodologies for each area. These methodologies range from mailout/mailback to update/leave and list/enumerate.

Data Dissemination

Most Census 2000 data collected in the AIANA and the Hawaiian Home Lands are processed and disseminated in the same way as information collected for the rest of the nation. (See Section XIII.) The Census Bureau works with tribal liaisons and organizations to meet their data needs.

MILESTONES

September 1999	Completed a series of regional meetings for tribal leaders and liaisons
January 1999	Implemented the Census in the Schools program

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October 1999-January 2000	Launched the early education phase of the advertising campaign
January - April 2000	Implemented the motivational phase of the advertising campaign and a media campaign to encourage households to respond to the census
February - April 2000	Implemented special promotional events
April - July 2000	Conducted the nonresponse phase of the national advertising campaign
August 2000	Completed definition of geographic areas

Table X-1. Census 2000 Geographic Programs for American Indian and Alaska Native Areas and Hawaiian Home Lands

Geographic Program	Type of Area	Purpose of Program
Tribal Review Program	Federally recognized tribes with a land base and federally recognized tribes in Oklahoma	Provide boundary and feature updates
Block Definition Project	Federally recognized tribes with a land base and federally recognized tribes in Oklahoma	Identify features for use as Census 2000 block boundaries
Participant Statistical Areas Program	Federally recognized tribes with a land base and federally recognized tribes in Oklahoma	Define Census statistical areas such as tracts, block groups, designated places, and county divisions
Tribal Subdivision Program	Federally recognized tribes with a land base and federally recognized tribes in Oklahoma	Delineate tribal legal and administrative areas within their land base)
Oklahoma Tribal Statistical Area Program	Federally recognized tribes in Oklahoma	Delineate the former reservations as Oklahoma tribal statistical areas
Tribal Designated Statistical Area Program (proposed)	Federally recognized tribes outside Oklahoma without a land base	Delineate an identifiable land area as a tribal designated statistical area
Alaska Native Regional Corporation Program	Alaska Native areas	Alaska Native Regional Corporation officials delineate, review, and update boundaries
Alaska Native Village Statistical Area Program	Alaska Native areas	Alaska Native village officials and update boundaries
State Reservation Program	State-recognized tribes with a land base	State government liaison reviews and update boundaries
State Designated American Indian Statistical Area Program	State-recognized tribes without a land base	Replaces 1990 Tribal Designated Statistical Area program for state-recognized tribes
Hawaiian Home Lands	Trust Areas administered by the Department of Hawaiian Home Lands	New program to identify Hawaiian Home Lands for Census 2000

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Section XI.

**Telecommunications
Support and
Automated Data
Processing**

XI.A. TELECOMMUNICATIONS SUPPORT

OBJECTIVE

The Census Bureau provided the infrastructure necessary to support the Census 2000 telecommunications requirements.

MAJOR FEATURES

The Census 2000 telecommunications network encompassed communication links between the following facilities:

- C Census Bureau Headquarters in Suitland, Maryland
- C 12 Regional Offices (ROs)
- C Bowie, Maryland, Computer Center
- C 12 Regional Census Centers (RCCs) and the Puerto Rico Area Office
- 12 Accuracy and Coverage Evaluation (A.C.E.) Offices and the Puerto Rico Area Office
- C Jeffersonville, Indiana, National Processing Center (NPC)
- C Three contracted Data Capture Centers (DCCs): Phoenix, Arizona; Pomona, California; and Essex in Baltimore County, Maryland
- C 520 Local Census Offices (LCOs)

In addition, we established communication links to the commercial telephone centers to support Telephone Questionnaire Assistance and Coverage Edit Follow Up.

We used Asynchronous Transfer Mode (ATM) as our communications link (through frame relay or another type of dedicated link) between headquarters, the Bowie Computer Center, and the DCCs. The ROs, RCCs, A.C.E. Offices, and LCOs are linked to the frame relay cloud (the communications network provided by the telephone company) through leased, secure T1 communication lines.

MILESTONES

Defined telecommunications requirements for:

Prior to October 1995	Bowie Computer Center
October 1995-April 1997	Regional Census Centers
January 1996-March 1997	Jeffersonville National Processing Center
January 1996-March 1997	Contracted Data Capture Centers
July-September 1997	Local Census Offices

December 2000

XI.B. DATA CAPTURE SYSTEM

OBJECTIVE

The Census Bureau utilized the best available data capture methodology in Census 2000.

MAJOR FEATURES

The Census 2000 data capture methodology utilized the best available technology to accommodate the use of respondent-friendly questionnaires. The Census Bureau has identified components of the data capture process that may be best performed by private-sector partners. The Census Bureau is taking advantage of available commercial off-the-shelf hardware and software representing technological advancements in information technology and systems without limiting itself to creating in-house solutions.

The following are the most significant features of the Data Capture System 2000:

- C Four centers responsible for data capture functions.
- C A full electronic data capture and processing system for imaging questionnaires.
- C Questionnaires returned by mail sorted automatically to ensure timely capture of critical information needed before nonresponse followup activity begins.
- C Optical Mark Recognition (OMR) used for all check-box data items.
- C Optical Character Recognition (OCR) used to capture write-in character-based data items.
- C A key-from-image operation to capture and resolve difficult OCR cases.
- C Quality assurance conducted on data keying and scanning activities.
- C The use of electronic imaging and captured data to reduce the logistical and staffing requirements that handling large volumes of paper questionnaires would require.

Method of Data Capture

Data Capture was the process by which respondent data are taken from the census questionnaires and then converted and stored in a computer readable format. Data Capture was performed in the Census Bureau's data capture centers which are decentralized facilities that checked in questionnaires and enumerator forms returned by mail, created images of questionnaire pages, and converted data to computer readable format.

Data Capture was implemented in two phases or passes. During the first pass, all forms were converted from paper to electronic image, data were keyed from paper where imaging is not possible, and Optical Character Recognition and Optical Mark Recognition were performed on all forms. Data keying from image was performed on all fields that do not meet accuracy requirements from the automated recognition processes for the 100 percent data.

During the second pass, the digital images captured during the first pass were processed to obtain the sample data from the long forms that were not captured during the first pass.

MILESTONES

March 1997	Awarded Data Capture System 2000 contract
March-May 1997	Prepared system development plan
March-June 1997	Prepared operations and facilities plan
January 1998	Awarded Data Capture Services contract
March-July 1998	Demonstrated plan (Census 2000 Dress Rehearsal)
April 1999-January 2000	Opened data capture centers/installed equipment
November 1999-January 2000	Finalized procedures and training
March-September 2000	"Pass One" captured data from Census 2000 forms
September-November 2000	"Pass Two" captured "sample data" from images

December 2000

XI.C. AUTOMATED DATA PROCESSING SYSTEM

OBJECTIVE

The Census Bureau developed an effective and efficient system for controlling, managing, and processing Census 2000 data.

MAJOR FEATURES

The Census 2000 Data Processing System is a complex network of operational controls and processing routines intended to store and service the decennial control and data requirements. It includes the necessary interactions with the Master Address File (MAF), Operations Control System 2000 (OCS 2000), Data Capture System 2000 (DCS 2000), Internet Data Collection (IDC), and Telephone Questionnaire Assistance (TQA), not only to control, accept, and store the data but also to provide the necessary computer processing to produce the census.

The Census 2000 Data Processing System is divided into three operational phases of precensus, census, and post-census activities.

- C Precensus activities are those required for converting the MAF into the decennial control database that remains linked to both TIGER (Topologically Integrated Geographic Encoding and Referencing) and the MAF. These activities include form sampling (long or short), selecting address identifications for the form types, targeting identifications (for example, areas targeted for special enumeration methods), and preparing the address files for printing labels on the questionnaires. Control information (both geographic and address related) are provided to the OCS 2000 for guiding both field canvassing and address capture processing.
- C Activities concurrent with census data collection/capture are those necessary to coordinate the check in and storage from the multiple sources of collection (DCS 2000, Be Counted questionnaires, Internet and telephone), to define the responding/nonresponding universes, and to provide enumeration controls and workload to the field. Included in these activities are the loading and updating of the central databases for the storage of all census responses provided through the enumeration and data capture processes.
- C Post-census activities are those necessary to prepare data from the original responses for release. These activities include unduplicating multiple responses, editing and imputation, coding of write-in response data (such as race, language, industry and occupation, and place of work/migration), tabulation recoding, and data disclosure avoidance.

In addition, detailed data files are prepared from information collected on the short and long form questionnaires. These activities include editing the responses, applying statistical techniques to account for missing data, and applying weights to sample records from the long form questionnaires. The files are provided to the American FactFinder for data dissemination.

MILESTONES

July 1999	Received the Census 2000 MAF
September 1999	Sent initial address files to printing contractors
April 2000	Defined nonresponse followup universe
July 2000	Defined coverage improvement followup universe
September-October 2000	Tabulated data and created the file for apportionment counts
October-November 2000	Performed the complete count data edits, imputation, disclosure avoidance, and tabulation recoding
December 2000	Started providing complete count data files to the American FactFinder
June-August 2001	Prepare detailed data files for information collected on the long form questionnaires and provide these files to the American FactFinder

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Section XII.
**Accuracy and
Coverage
Evaluation
(A.C.E.)**

XII. ACCURACY AND COVERAGE EVALUATION (A.C.E.)

OBJECTIVE

The Accuracy and Coverage Evaluation (A.C.E.) program included a coverage measurement survey used to determine the number of people and housing units missed or counted erroneously in Census 2000. The A.C.E. survey was a nationwide sample survey conducted by the Census Bureau independently of and concurrently with Census 2000. The results of this survey will be used to evaluate the final census counts and, based on a determination to be made by the Census Bureau Director (see Section III, Legal Requirements), may be used to produce statistically adjusted counts for redistricting and other non-apportionment purposes. The phases of the A.C.E. are as follows: Independent Listing, Housing Unit Matching, Person Interviewing, Person Matching, Estimation, and Final Housing Unit Matching.

MAJOR FEATURES

The A.C.E. listing covered 29,695 block clusters with an estimated total of 2,039,950 housing units. The listing was created prior to the start of the census enumeration. The listing was matched to the Decennial Master Address File (DMAF) that was created from the various census address listing and update operations.

Enumerators visited each selected block cluster and listed each housing unit in the selected blocks. They traveled all streets, roads, alleys, and so forth looking for places where people live, stay, or could live. The enumerators recorded the location of each housing unit they found on an A.C.E. block map (map spotting). The enumerators then conducted interviews at or for each housing unit, to obtain the address and learn if any other housing units were in the building or elsewhere on the property. The enumerators then recorded each address and other related information. For multi- units, the enumerators obtained the address and a count of units from the building manager or rental office manager. In Special Places, only housing units were included in the A.C.E.

The initial sample of block clusters for the Independent Listing operation was allocated to states according to the previously planned Integrated Coverage Measurement (ICM) 750,000 housing unit design. The results from the Independent Listing operation were used to select a reduced interviewing sample for the A.C.E. Person Interview. The sampling for the A.C.E. occurred in phases resulting in an interview sample of approximately 300,000 housing units stateside and approximately 15,000 housing units in Puerto Rico.

XII-2

The independent list of housing units within sample blocks was matched to the census inventory of housing units, first by a computer match and then remaining cases were clerically matched. Cases still unmatched after this phase went to Housing Unit Followup.

Before the Housing Unit Followup operations began, computer and clerical matching (known as before followup or BFU) were done to match addresses that appear on the DMAF with the addresses collected during the A.C.E. Independent Listing operation. The addresses that remained unmatched and required additional information to resolve were sent to Housing Unit Followup for interviewing. The followup interviews attempted to gather more information about unmatched housing units in order to resolve differences between the A.C.E. listing and the Census listing. After the Housing Unit Followup was complete, clerical matching staff use the information collected to resolve the match status for remaining unmatched cases and assign final match codes during the After Followup Clerical Matching stage.

The results of the Housing Unit operation were used to create the list of housing units that are contacted during the Person Interview operation. During the interview phase, the interviewer collected information about the current residents and anyone who had moved out of the sample block between Census Day and the time of the interview. The information collected for each person included name, sex, age, and race. The interviewer asked questions about alternate residences to establish where people lived on Census Day according to census residence rules. Interviews were conducted either by telephone or personal visit. Telephone interviews were conducted only at households that returned their census questionnaire, provided their telephone numbers, and were matched to an address listed in the A.C.E. Independent Listing operation. Personal visit interviews could not be conducted for an A.C.E. sample area until the Census 2000 Nonresponse Followup operation had been completed in that area. Both the telephone and personal visit interviews were conducted using a computer assisted personal interview instrument.

The data collected for each person during the A.C.E. Person Interview were matched to the person data that was collected for the census in the same areas as the A.C.E. sample. The records were sent through a computer match and then a clerical match, similar to the housing unit phase. For persons that were not matched or possibly matched after the computer match and Before Followup Clerical Matching stages, a field followup was conducted to gather additional information. The Person Followup Interview attempted to resolve any differences between the A.C.E. and the census. The results of these interviews were used to code the status of the persons during the After Followup Coding operation.

The final operation in the A.C.E. is the production of the estimates and their associated variances. The estimates are determined by using dual system estimation and the results from the Person Matching operations to estimate the number of persons

missed or erroneously included in the census. Estimates are calculated separately within subgroups called post-strata. This information is used to calculate the statistical adjustments for the census population counts. During small area estimation, these post-strata estimates are used to calculate population estimates for blocks and larger geographic areas. Variances are calculated for all estimates.

MILESTONES

September-December 1999	Address listers compiled an independent list of addresses in the block clusters selected for the A.C.E. sample
January-March 2000	Conducted Housing Unit Followup
March-April 2000	Created an enhanced list of all housing units to be interviewed
May-August 2000	Conducted A.C.E. person interviews by telephone and personal visit
July-August 2000	Conducted nonresponse conversion operation for noninterviews
September-November 2000	Conducted Person Match and Followup
November 2000-April 2001	Compute population and variance estimates

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Section XIII.
Dissemination and
Products

XIII.A. TABULATION AND DISSEMINATION PROGRAM

OBJECTIVE

The Census Bureau will use new technology and meet customer demand for faster, more flexible access to census data.

MAJOR FEATURES

Census 2000 data will be disseminated mainly using a new data retrieval system called the American FactFinder (AFF). During its development, this system was known as the Data Access and Dissemination System (DADS). Still in the developmental stages, AFF will provide an interactive electronic system that will enable data users to access prepackaged data products, data documentation, and online help, as well as build custom data products online and offline. The first version of the American FactFinder was available for limited use in January 1999; in April 1999, the system had additional functions and data files. Census 2000 data products will be available beginning March 2001. Figure XIII-1 depicts the various products available through the American FactFinder.

Certain data products, such as 100 percent and summary profiles, will be disseminated in traditional media (such as CD-ROM and printed copy) as well as through the American FactFinder. The Census Bureau discussed options and issues related to determining the types of data products and their medium of dissemination with various segments of the data-user community before making the final decisions. The Census Bureau solicited the advice and recommendations of data users throughout the planning, design, and testing stages of the American FactFinder.

The American FactFinder will be accessible to the widest possible array of users through the Internet, Intranet, and all available intermediaries, including the nearly 1,800 State Data Centers and affiliates, the 1,400 Federal Depository libraries, and other libraries, universities, and private organizations.

The American FactFinder is being designed with the capability to:

- C Provide access to Census 2000 data, such as the type of information shown in the 1990 census Summary Tape Files. Data users will have online viewing, tabulating, and ordering capabilities.
- C Produce customized products, including various display formats, such as tables, charts, graphs, and maps based on Census Bureau or user-defined geographic areas.

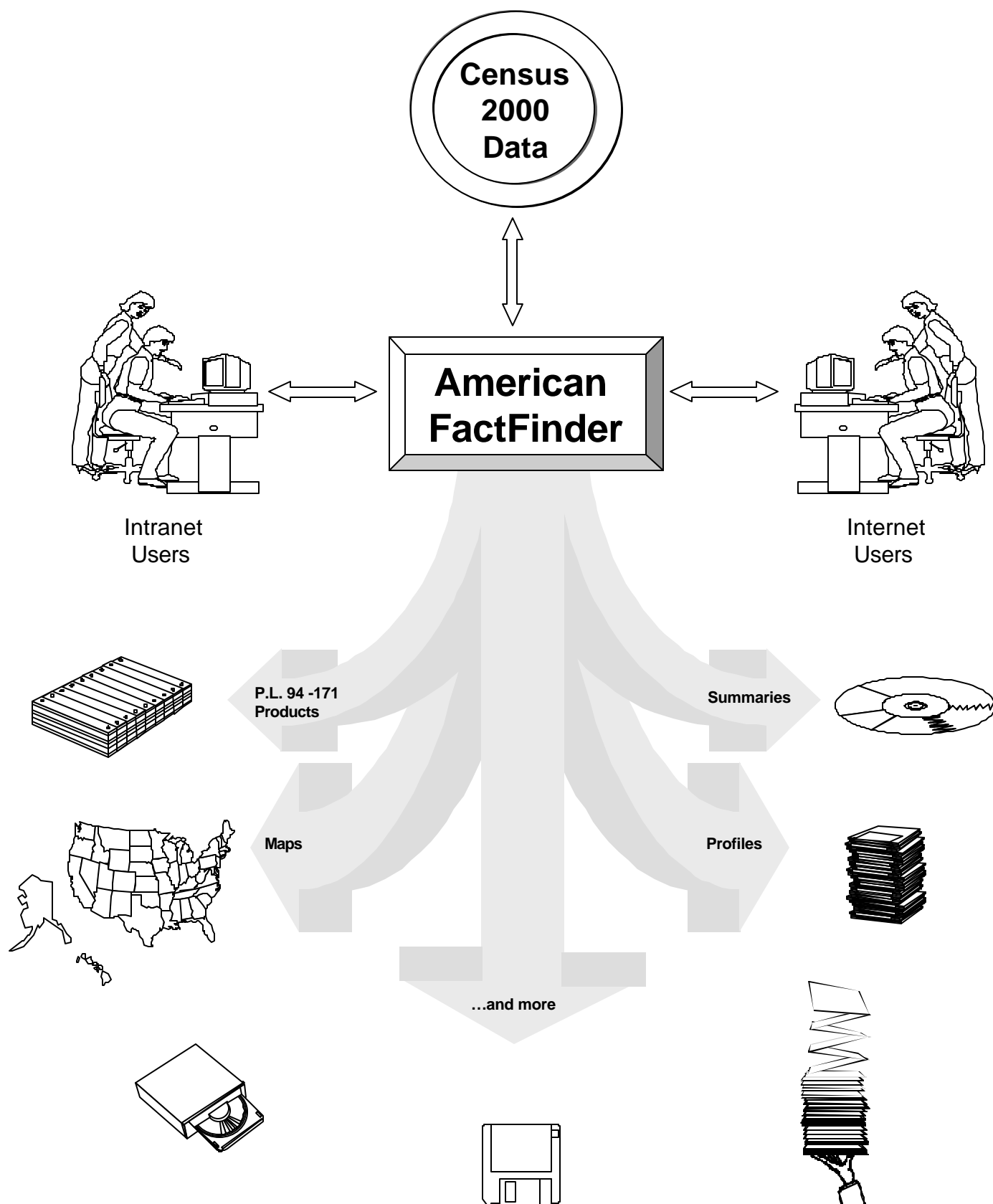
- Provide documentation and explanatory information for data subjects and geographic areas.
- C Provide users with an online help feature for using the system and accessing census data, as well as instructions on how to seek further assistance.

The Census Bureau worked with data users to explore questions of access for all users and continues to work with partners and stakeholders to provide access to those user communities who have less access to computers. Also, data users have been asked for recommendations on the types of data to be predefined in the American FactFinder and included in various data products.

MILESTONES

September 30, 1996	Released DADS Prototype 1, "proof of concept" showing basic design, technology, and functionality
October 31, 1997	Released DADS Prototype 2 with expanded functions such as data product creation and online help
January 1999 - October 2000	Began release of Dress Rehearsal product prototypes for Census 2000 (redistricting data first, other 100 percent and sample data followed)
March 2001	Complete release of redistricting data to states
October 2001	Begin release of Census 2000 100 percent summary file data
October 2002	Begin release of Census 2000 sample summary file data
November 2002	Printed Report - Summary Population and Housing Characteristics based on 100 percent data
December 2003	Printed Report - Summary Social, Economic, and Housing Characteristics based on sample data
December 2003	Printed Report - Population and Housing Unit Counts with selected historical counts

Figure XIII-1. American FactFinder



XIII.B. P.L. 94-171 REDISTRICTING DATA PROGRAM

OBJECTIVE

The Census Bureau will satisfy the requirements for Public Law (P.L.) 94-171 through the Census 2000 Redistricting Data Program. The decision on whether or not to release statistically adjusted P.L. 94-171 data is governed by Title 15, Code of Federal Regulations, Part 101. (See section III). The Department of Commerce issued this regulation to delegate from the Secretary of Commerce to the Census Bureau Director the authority to make the final determination regarding the methodology to be used in calculating the tabulations of population reported to states and localities under the terms of P.L. 94-171. By March 2001, the Census Bureau Director will decide, taking into consideration the recommendations of the Executive Steering Committee on A.C.E. Policy (ESCAP), whether the adjusted counts should be released as the P.L. 94-171 redistricting data product. Consistent with the requirements of P.L. 105-119, if the statistically adjusted counts are released as the P.L. 94-171 data product, then the block-level data and other subsequent, specifically-designated data products without statistical adjustment will also be released (see section XIII.D).

MAJOR FEATURES

This program offers the redistricting officials in each state an opportunity to provide the Census Bureau with the information to create the geography we need to tabulate their redistricting data. We then provide them with the redistricting data and related geographic products that the states use to complete Federal and state redistricting according to their specific deadlines.

The Census 2000 Redistricting Data Program consists of:

- **Phase 1, the Block Boundary Suggestion Project**, offers state redistricting officials the opportunity to identify visible features that they suggest be held as Census 2000 block boundaries. The Census Bureau identifies these boundaries in its TIGER database and, once agreed upon, hold them as block boundaries for tabulation of Census 2000.
- **Phase 2, the Voting District Project**, is the phase where state redistricting officials may submit the boundaries and geographic codes of the voting districts (election precincts) and state legislative districts using whole census blocks. The Census Bureau will insert these boundaries into the TIGER database.
- **Phase 3, Release of Census 2000 Redistricting Data**, is the dissemination

of Census 2000 data and accompanying geographic products to the governor and majority and minority legislative leaders responsible for redistricting in each state. States that provided voting districts receive their data tabulated by voting district. States that provided state legislative districts receive their data tabulated by state legislative district. The electronic product includes:

- C Data files for standard tabulation areas (for example; county, city, census tract), census block, and voting districts (when provided by the state) and state legislative districts, broken down by major race groups and Hispanic origin for the total population and for persons 18 years and over
- TIGER/Line files (including voting districts and state legislative districts when provided by the state)
- County Block Maps (displaying voting districts when provided by the state)
- Voting District Outline Maps (displaying state legislative districts when provided by the state)
- Census Tract Outline Maps
- C *Congressional District Atlas*, 108th Congress of the United States, in digital form and as a printed report, including a series of maps and tables from the TIGER database for the districts of the 108th Congress resulting from the Census 2000 reapportionment
- Wall map of the United States by the congressional districts of the 108th Congress

The Census Bureau is required by P.L. 94-171 to deliver redistricting data/geographic products to the states within 1 year after Census Day. Individual states have their own timing requirements for the completion of state and federal redistricting.

MILESTONES

January 1999	Completed Phase 1, Block Boundary Suggestion Project
October 2000	Completed Phase 2, Voting District Project
March 31, 2001	Complete Phase 3, release of P.L. 94-171 redistricting data/geographic products to states
December 2003	Release <i>Congressional District Atlas</i> , 108 th Congress

XIII.C. GEOGRAPHIC PRODUCTS

OBJECTIVE

To help users understand and effectively use the Census 2000 data, the Census Bureau provides geographic products. These products and other appropriate tools identify the names, boundaries, codes, and other attributes of the geographic units for which the Census Bureau tabulates and disseminates the Census 2000 data.

HIGHLIGHTS

The names, boundaries, and attributes of the geographic entities for which the Census Bureau tabulates data are identified through a variety of means, including internal Census Bureau operations and participant programs with state, local, and tribal governments, and regional and metropolitan planning agencies. The Census Bureau also works with these participants to update the features—including their names and address ranges—shown in its geographic database (TIGER).

The Census Bureau incorporates the information relating to the geographic entities and features into the TIGER database and prepares extracts from TIGER for use in conducting the census and in tabulating and disseminating census data. (Special geographic extracts from the TIGER database will support the American FactFinder).

The key geographic products planned for Census 2000 are:

- **Maps in digital and hard copy form.** These include detailed maps (such as, the County Block Maps), outline maps (such as, the Census Tract Outline Maps), and thematic maps (such as, those showing percent of population by county for a specific racial category). The Census Bureau also generates supporting maps based on a specific data product.
- **Extracts of the TIGER digital geographic data base.** These are available in the form of TIGER/Line files. Other digital products include cartographic boundary files, for use with mapping software and relationship files, which alert customers to changes in census tract and block boundaries.

The geographic entities reported in data products vary. Some geographic entities—and related products—remain constant across data products. Other geographic entities are relevant at different times and in different products. For example:

- Voting districts are an important geographic entity for P.L. 94-171 geographic products but are not included in the regular census products. The Census Bureau prepares special maps and geographic products showing these areas.

- While 100 percent data (from the questions asked of all persons) are available for census blocks, sample data (from the long form) are not. Similarly, some data files do not include certain geographic entities or geographic entities below a certain population (for example, places with populations of fewer than 10,000).
- Reapportionment from Census 2000 will be reflected in the redistricting for the 108th Congress. Initial data files for Census 2000 will contain the districts of the 106th Congress.

MILESTONES

January 2001	Release the Census 2000 TIGER/Line files
March 2001	Release products for the Redistricting Data Program to the states
June 2001	Release Governmental Unit Block Maps and Census Tract Outline Maps
July 2001	Release cartographic boundary files for select levels of tabulation geography on the Internet
August 2001	Release County Subdivision Outline Maps, State/county Outline and Locator Maps
June 2003	Complete the release of products for the districts of the 108 th Congress

XIII.D. DATA PRODUCTS

OBJECTIVES

Census 2000 data products are designed to meet a variety of data needs for different segments of the data user community. The Decennial Census data are used for apportioning the U.S. House of Representatives, redistricting Congressional, state, and local legislative districts, and allocating federal funds, as well as for planning and decision making by communities, businesses, and other organizations.

MAJOR FEATURES

In addition to the traditional census data products such as summary files and profiles, the Census Bureau will produce new items such as quick tables and geographic comparison tables. Summary files are state and national files containing the broadest range of counts and characteristics by geographic area ranging down to the census block or tract. Profiles are tables showing characteristics for a state, place, county, American Indian Area, or Alaska Native Area. Profiles are based on the popular 1990 press release tables. Quick tables contain fixed shells in which the user can easily vary the geographic area and population group. Geographic comparison tables will show states in a national table or various areas within each state.

Census 2000 data will be disseminated mainly using a new data retrieval system called the American FactFinder, which is accessible via the Internet. This system will enable data users to access prepackaged data products, data documentation, and online help. Users also will be able to build custom data products online and offline. Each release of the American FactFinder will provide additional functionality and data sets as the Census 2000 data dissemination program begins with the Public Law (P.L.) 94-171 redistricting data and moves forward to the summary files, quick tables, and thematic mapping.

The P.L. 94-171 redistricting data products will be produced from the final Hundred Percent Detail File (or the final Hundred Percent Estimated Detail File if the redistricting counts are adjusted, see page XIII-12) and the final definitions of the geographic areas for Census 2000. From these files, we will create the Public Law Summary Files using the four Public Law matrices (data by race; Hispanic or Latino and not Hispanic or Latino; race for the population 18 years and over; and Hispanic or Latino and not Hispanic or Latino by race for the population 18 years and over). We will compare the Public Law Summary Files to an independent tabulation and conduct a final review. Each state will be released separately as soon as its final review is complete.

The P.L. 94-171 redistricting data products will be distributed no later than April 1, 2001. The full set of Census 2000 data products will be distributed by the end of September 2003. The Census Bureau will use three types of media for distributing data products: the American FactFinder, printed reports, and DVD or CD-ROMs.

Most data products will be available on DVD and through the American FactFinder. Selected products also will be available as printed reports or CD-ROMs. Census 2000 data products in the American FactFinder on the Internet will conform to the provisions of the Americans with Disabilities Act (ADA).

TYPES OF DATA PRODUCTS

Hundred Percent Products or the Census 2000: Summary Population and Housing Characteristics - These products will include tabulated information on: Hispanic or Latino origin, sex, race, age, and tenure (whether the home is owned or rented). Summary File 1 presents population counts down to the block level for 63 race categories and Hispanic or Latino populations. Summary File 2 presents population and housing unit characteristics iterated for American Indian and Alaska Native tribes and for many detailed race (such as, Native Hawaiian and Other Pacific Islander) and Hispanic or Latino categories. These products will be available through the American FactFinder, on DVD, and in some cases, on CD-ROM. The following are the 100-percent products planned:

- Census 2000 Redistricting Data Summary File
- Demographic Profile
- Congressional District Demographic Profile
- Race and Hispanic or Latino Summary Table
- Summary File 1 (SF-1)
- Summary File 2 (SF-2)
- Quick Tables
- Geographic Comparison Tables
- Census 2000 Summary Population and Housing Characteristics
- Census 2000 Congressional District Data Summary File
- Advanced Query Function - Allows users to specify contents of tables/tabulations, determine universes, and allowable geographic levels. Also, it provides links to map products.

Sample Products or the Census 2000: Population and Housing Unit Totals - These products will include social, housing, and economic characteristics. Summary File 3 presents population counts for ancestry groups. Summary File 4 presents population and housing unit characteristics iterated for many detailed race and Hispanic or Latino categories and American Indian and Alaska Native tribes, and ancestry groups. These products will be

available through the American FactFinder, on DVD, and in some cases, on CD-ROM. These data products are as follows:

- Demographic Profile
- Congressional District Demographic Profile
- Summary File (SF-3)
- Summary File (SF-4)
- Congressional District Data Summary Files
- Quick Tables
- Geographic Comparison Tables
- Public Use Microdata Sample (PUMS) Files
- Census 2000 Summary of Social, Economic, and Housing Characteristics
- Advanced Query Function - Allows users to specify contents of tables/tabulations, determine universe, and allowable geographic levels. Also, it provides links to map products.

Printed Reports - There will be a series of reports consisting of one report per state and a national summary. These reports will each contain about 80 tables of summary information for both hundred percent and sample data. Geographic coverage in the state reports will include counties, county subdivisions, congressional districts, and state parts of American Indian and Alaska Native Areas. These products will be available through the American FactFinder. Printed and bound copies may be custom ordered.

Geographic Products and Maps - A variety of maps, boundary files, and other geographic products will be available to help users locate and identify geographic areas related to Census 2000 data. These products will be available through the American FactFinder, on DVD, and in some cases, as custom-ordered print products or CD-ROM. These products are as follows:

- Census 2000 TIGER/Line Files
- Census 2000 Redistricting TIGER/Line Files
- Census 2000 Government Unit Block Maps
- Census 2000 County Block Maps
- Census 2000 Census Tract Outline Maps
- Census 2000 Voting District/State Legislative District Outline Maps
- Reference Maps:
 - State/County Subdivision Maps
 - State/County Outline Maps
 - Counties of the U.S. Wall Map
 - State-based Metropolitan Areas Maps (page-size)

- Metropolitan Areas Wall Map
- Public Use Microdata Areas (PUMA) Outline Maps
- Individual Urbanized Area Outline Maps
- 108th Congressional District Wall Map
- 108th Congressional District Atlas
- Urbanized Areas of the United States
- Statistical Thematic Maps:
 - “Night Time” Population Distribution Map
 - Population Density in the United States
 - Race and Ethnicity Population Density of the United States Maps
 - (Additional map topics are likely)
- Cartographic Boundary files - Generalized boundary files for small scale thematic mapping.
- Relationship Files - Block Relationship Files (formerly called comparability files) compare 1990 to 2000 blocks and Census Tract Relationship Files compare 1990 to 2000 census tracts.

Media for Census 2000 Data:

- Internet
- CD-ROM
- DVD
- Print - As mentioned above
- Print on demand - Custom orders

Puerto Rico and Island Area Data Products:

- **Puerto Rico** - The Census Bureau plans to produce the same data products as described above for Puerto Rico. In addition, the Census Bureau has incorporated a Spanish language extension to the American FactFinder on the Internet to support the dissemination of and easy access to Census 2000 Puerto Rico tier 1 and 2 data.
- **The Island Areas** - The Census Bureau conducted Census 2000 operations in American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands (collectively referred to as the Island Areas) in partnership with the government of each Island Area. The Census Bureau plans to release the following data products for the Island Areas:
 - Demographic Profile
 - Summary File
 - Census 2000: Summary Population and Housing Characteristics
 - Public Use Microdata Sample (PUMS) File (U.S. Virgin Islands and Guam)

PUBLIC LAW REQUIRED PRODUCTS

By April 1, 2001, the Census Bureau will provide tabulations known as redistricting data (as required by P.L. 94-171) to each state so that they can redraw congressional, state, and local legislative districts. Public Law 94-171, which amended the Census Law (Title 13, United States Code), was enacted by Congress in 1975. The purpose of this law is to provide state legislatures with small-area census population totals for legislative redistricting. To meet this requirement, the Census Bureau developed the Census 2000 Redistricting Data Program.

The decision whether to release statistically adjusted P.L. 94-171 data will be based on Title 15, Code of Federal Regulations, Part 101. The Department of Commerce issued this regulation to delegate from the Secretary of Commerce to the Census Bureau Director the authority to make the final determination regarding the methodology to be used in calculating the tabulations of population reported to states and localities under the terms of P.L. 94-171. By March 2001, the Census Bureau Director will decide, taking into consideration the recommendations of the Executive Steering Committee on A.C.E. Policy (ESCAP), whether the adjusted counts should be released as the P.L. 94-171 redistricting data product.

If the statistically adjusted counts are released as the P.L. 94-171 data product, P.L. 105-119 requires the Census Bureau to make publicly available a nonstatistically adjusted version of the data in identical format, timing, geographic levels, and price as the statistically adjusted version. This law applies only to the P.L. 94-171 data and Hundred Percent Summary File data products and does not affect sample data products. Census 2000 Decision Memorandum No. 98 documents the plans for the release of the two specific versions (statistically adjusted and nonstatistically adjusted) of data products for Census 2000.

CENSUS 2000 REDISTRICTING DATA

The Census Bureau will provide Census 2000 population totals for counties, American Indian areas, cities, towns, county subdivisions, census tracts, block groups, and blocks. States that participated in Phase 2 of the Redistricting Data Program will receive data summaries for local voting districts that meet the Census Bureau's technical criteria.

Redistricting data will include population totals by race, Hispanic origin, and voting age. The Census Bureau has decided to meet the needs for redistricting by providing the 63 categories of race in combination with Hispanic or Latino categories tabulated for both total population and people 18 years of age and over. In accordance with Title 13, United States Code, the Census Bureau will continue to protect the confidentiality of individuals during the tabulation and presentation of the data at every step in the process and during the course of Census 2000. Later, the Bureau will apply standard disclosure avoidance techniques to the base edited files that are used to generate data products. In January and February 2001, the Census Bureau will review the effects of disclosure avoidance techniques to be certain that the data summaries for small areas, such as census blocks, including those to be used for

legislative/voting districts, both protect respondent confidentiality and do not impair the use of these data for enforcement of voting or other civil rights programs.

Census 2000 Redistricting Data will be accompanied by census maps showing blocks, census tracts, counties, towns, cities (showing their boundaries as of January 1, 2000), county subdivisions, American Indian areas/Alaska Native areas and voting districts (for participating states). The following are brief descriptions of the Census 2000 Redistricting products.

- **Census 2000 Redistricting Data (P.L. 94-171)** - The Census Bureau will fulfill Public Law 94-171 and provide each state's governor and legislative leaders with the Census 2000 Redistricting Data by April 1, 2001. Data will be shown at all geographic levels for each state, the District of Columbia, and the Commonwealth of Puerto Rico down to the census block level and will include data summaries (or totals) for voting and legislative districts (if provided by the state during the Redistricting Data Program). These data products will be released through the American FactFinder after the delivery of the CD-ROMs to each state recipient, to the District of Columbia, and to the Governor of Puerto Rico.
- **Census 2000 Redistricting Data to fulfill P.L. 105-119** - If the statistically adjusted counts are released as the P.L. 94-171 data product, then to fulfill the requirements of P.L. 105-119 (enacted in 1997), the Census Bureau must make publicly available a nonstatistically adjusted version of these data. The format, timing, geographic levels, and price of the P.L. 94-171 data products and these counts will be identical.
- **Geographic Products for Redistricting:**
 - **County Block Maps** - For each county showing the voting district boundaries in addition to the boundaries, names, and codes for American Indian areas/Alaska Native areas/Hawaiian home lands, county subdivisions, places, census tracts, block groups, and census blocks. These maps will be available on CD-ROM, DVD, the Internet, and paper.
 - **Voting District/State Legislative District Outline Maps** - County-based maps showing the boundaries (including the features underlying these boundaries and the names of these features) and codes for Voting Districts as delineated by the participating states in Phase 2, Voting District Project, of the Redistricting Data Program. In addition, for states that submit the information, these maps will show state legislative districts and their underlying features. These maps also will show the boundaries and names of American Indian areas/Alaska Native areas/Hawaiian home lands, county subdivisions, and places. The maps will be available only for those states and counties where information was provided under the Voting District Project.

United States
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Section XIV.

**Testing, Dress
Rehearsal,
Evaluation, and
Research**

XIV.A. TESTS AND RESEARCH

OBJECTIVE

The Census Bureau engaged in an ambitious testing and research program designed to develop new approaches and techniques for possible implementation in Census 2000. The ultimate goal of this program was to boost participation in the census, thereby improving coverage and reducing costs.

MAJOR FEATURES

Even before the 1990 census data products were completely released, the Census Bureau initiated many tests and research projects (such as focus group and cognitive studies) between 1992 and 1994. Early testing was needed to allow time to study fundamental reforms in census design. The following is a summary of these efforts:

- The earliest tests and research focused on ways to increase the willingness and ability of respondents to respond by mail to the census by using questionnaire design and mailing package formats that were easier for respondents to understand and complete and notifications for alerting and reminding respondents to complete the forms.
- Various testing and research studies were conducted concerning technologies to speed data collection and ways to give people greater flexibility in how they respond to the census. Other research assessed current and emerging data capture technologies (for example, electronic imaging and optical mark recognition) that offer the potential for cost reductions for processing.
- Research on automated address list maintenance focused on supporting the development of a continuously updated Master Address File linked to the TIGER database.
- Considerable testing and research were conducted to study administrative records including: examining respondent attitudes about using records held by other agencies; assessing public reaction to collecting social security numbers; investigating various state and local administrative records systems; creating a database of sources of administrative records; and developing effective methods to use when importing, standardizing, and matching files.
- At mid-decade, the 1995 Census Test provided an additional opportunity to test many procedures and features proven successful in the earlier tests and research and to fulfill additional test objectives. This test evaluated 15 activities, among

them a multiple mail strategy with respondent-friendly forms, a new methodology to count persons with no usual residence, techniques of sampling for nonresponse, a mail strategy of sending Spanish-language forms to targeted areas, and the collection of long form (sample) data using various length forms (to see how response rates were affected by form length).

- Ongoing cost-modeling research developed statistical models using data available from the various census tests. This research experimented with predicting many variables, such as census response, data collection workloads, and staff sizing of local census offices.
- The 1996 National Content Survey (formally known as the U.S. Census 2000 Test) was the principal vehicle for testing and evaluating subject content for Census 2000. It also provided information on questionnaire design and mailing strategy and techniques to improve coverage.
- The 1996 Race and Ethnic Targeted Test (formally known as the 1996 Census Survey) was the principal vehicle for testing and evaluating several major alternatives for asking the race and ethnicity questions. It studied how the proposed alternatives affected the distribution and quality of responses compared with the 1990 questions.
- The 1996 Community Census tested various features of the quality check Integrated Coverage Measurement program on two American Indian reservations and an urban site. Some of these features included techniques for measuring coverage in housing units and noninstitutional group quarters, use of administrative records for coverage improvement, and experimental questions designed to enhance address-listing procedures.

XIV.B. CENSUS 2000 DRESS REHEARSAL

OBJECTIVE

The Census 2000 Dress Rehearsal tested the various operations, procedures, and questions that were considered for Census 2000 under as near census-like conditions as possible.

MAJOR FEATURES

The Dress Rehearsal provided for operational testing of the National Processing Center, Regional Census Center, Local Census Office, and Data Capture Center procedures and systems planned for use in Census 2000. We employed the full array of methods, techniques, materials, work flows, equipment applications, and promotion and outreach programs considered for use at that time in Census 2000 as well as components of a traditional census.

New procedures considered for Census 2000--such as respondent-friendly forms readily available in many locations, multiple mail contacts with each household, digital capture of forms, and statistical estimation techniques--have all been tested individually in earlier operations. The Dress Rehearsal provided a census-like environment to test simultaneously both traditional and sampling census procedures considered for use in Census 2000. To meet new requirements, the Dress Rehearsal also included some operational procedures and systems that were not tested in any prior field or processing activity.

The Census Bureau launched an unprecedented partnership effort for the Dress Rehearsal and Census 2000. For the Dress Rehearsal, we worked closely with state, local, and tribal governments, community organizations, and others to conduct a wide range of census activities. For example, we asked local and tribal governments to review the Master Address File to ensure its completeness and accuracy. Other partnership efforts included working closely with local and tribal governments to implement the promotion and outreach program and to facilitate the availability of census questionnaires. The Dress Rehearsal communities worked with us as partners in the final evaluation of planned Census 2000 operations.

From the Dress Rehearsal, we produced prototype redistricting data products required by P.L. 94-171. We also created minimal standard printed and machine-readable 100 percent and sample data products.

Sites

The Census Bureau selected three sites for the Census 2000 Dress Rehearsal. The sites are the city of Sacramento, California; 11 counties in an area near and including the city of Columbia, South Carolina; and the county of Menominee, Wisconsin, including the Menominee American Indian Reservation. The combination of a large urban site, a small city-suburban-rural site, and an American Indian Reservation site, provided a comprehensive testing environment for refining planned Census 2000 methodology. These three sites reflected characteristics that provided a good operational test of Census 2000 procedures and systems.

C Sacramento, California - sampling census site

This site consists of the city of Sacramento, which had 369,365 residents and 153,362 housing units in the 1990 Census. The Census Bureau's official 1996 estimate showed an increase in the city's population to 376,243.

Sacramento contains great racial and ethnic diversity, including significant African American, Hispanic, and Asian and Pacific Islander populations. This diversity allowed us to test proposed Census 2000 methods designed to reduce the differential in the count and produce an accurate census for all components of the population. Sacramento is also a primary media market, which allowed us to implement a prototype of the Census 2000 advertising program. The site, representing the size of the area covered by a typical urban local census office in Census 2000, provided an understanding of the effectiveness of census operations and systems in this environment.

C Columbia, South Carolina - traditional census site

This site contains the city of Columbia in its entirety, including a small portion in Lexington County; the town of Irmo, which is in Richland and Lexington Counties, in its entirety; and the following contiguous counties in north central South Carolina:

Chester	Kershaw	Newberry
Chesterfield	Lancaster	Richland
Darlington	Lee	Union
Fairfield	Marlboro	

The 1990 census found that the counties comprising the Columbia site had 650,035 residents and 251,874 housing units. Our official 1996 estimates showed an increase for the 11 counties to 671,234 persons.

The Columbia site exhibited the characteristics of a small city-suburban-rural area that contains living situations and socioeconomic characteristics that we do not find in a predominately urban environment. This site provided our only opportunity to test procedures for developing a Master Address File in an area containing both city-style addresses (house number and street name) and noncity-style addresses (rural route or box number). The site offered a mix of difficult and presumably easy-to-enumerate areas in a suburban and rural setting.

In the Columbia site, we did not use sampling and estimation techniques to produce the census counts. Instead, we conducted a 100 percent followup of households that did not respond by mail or telephone. We also conducted a Post Enumeration Survey (PES) in the Columbia site to evaluate the accuracy of the results.

C Menominee County, Wisconsin, including the Menominee American Indian Reservation - sampling census site

I Menominee County and the Menominee American Indian Reservation are located in northeastern Wisconsin. Based on the 1990 census, the Menominee Reservation had 3,397 residents and 1,176 housing units. Menominee County had 3,890 residents and 1,742 housing units in 1990. (The Menominee Reservation and Menominee County share the same exterior boundary, but pockets of interior and totaling more than two square miles that are part of the county are excluded from the reservation. The Dress Rehearsal includes the entire county, however.) The Census Bureau's official 1996 estimates for Menominee County showed an increase to 4,609 persons.

Conducting the Dress Rehearsal on an American Indian reservation allowed the Census Bureau to test proposed Census 2000 methodologies for reducing the differential in the count for this component of the population. The Menominee Reservation was recommended by the Census Advisory Committee on the American Indian and Alaska Native Populations for the Dress Rehearsal.

MILESTONES

August 1997	Developed and updated address lists
October 1997	Reviewed and corrected address lists - local and tribal officials
December 1997	Opened local census offices
April 18, 1998	Census Day
July 1998	Completed census data collection
September 1998	Released Census 2000 Dress Rehearsal Midterm Status Report
November 1998	Completed quality check or PES data collection
December 1998	Completed census and quality check or PES processing
December 1998	Released site counts
January 1999	Released prototype P.L. 94-171 redistricting products
March 31, 1999	Completed Dress Rehearsal evaluations

XIV.C. QUALITY ASSURANCE

OBJECTIVE

The Census Bureau detects and corrects performance errors that can significantly affect coverage and data quality.

MAJOR FEATURES

Quality Assurance (QA) activities cover critical precensus, data collection, and data processing operations. QA plans are developed for the following activities:

- C Field geocoding
- C Field address listing, validation, and map spotting
- C Printing of public use forms
- C Input materials
 - C Map production
 - C Assembly kits - materials used by enumerators in the field
- C Paper-based data collection operations, Remote Alaska, Update/Leave, Urban Update/Leave, List/Enumerate, Update/Enumerate, Nonresponse Followup, Coverage Improvement Followup, and Field Verification
- C Computer-assisted data collection operations
 - C Personal interviewing for the Accuracy and Coverage Evaluation Survey
 - C Telephone interviewing for Telephone Questionnaire Assistance and Coverage Edit Followup
- Internet Data Collection
- C Data capture modes
 - C Optical character recognition
 - C Optical mark recognition
 - C Keying from paper
 - C Keying from images
 - C Scanning
 - C Digitizing
- C Clerical or automated matching and coding

Each of these operations is designed and implemented to meet decennial objectives.

The QA is tailored not only to eliminate significant nonsampling errors but also to be integrated efficiently into the operation work flow.

Software Quality Assurance (SQA) for data processing includes four phases to ensure accuracy and completeness of the products required to conduct an operation in an expeditious and thorough manner. For a specific project, not all steps of each phase are required. Where feasible, some or all of the steps of each phase will be applied to an entire process or components of a process as follows:

- Specifications and requirements development phase
 - Inter-divisional team identifies requirements
 - Operating divisions produce specifications
 - Formal walk through of all specifications
 - Reexamine for completeness
 - Modify when necessary
- The software development phase requires production divisions to ensure quality of outcomes by following one or more of the standard, acceptable practices.
 - Peer code review
 - Double programming
 - Extensive internal product reviews
- Pre-production phase
 - Production divisions are responsible for software production
 - Decennial Management Division is responsible for end-to-end testing of critical components of each stage of the process needed to produce a product
 - Test results are formally documented
 - Identified deficiencies are corrected before authorizing production
- Post-production evaluation phase are conducted to validate results prior to implementation.

MILESTONES

January 1998-January 1999	QA on geographic support activities (geocoding, digitizing, and map production)
August 1998-July 1999	QA on address listing and validation
July 1999	QA on printing public use forms
March-October 2000	QA on data capture operation
April-October 2000	QA on paper-based and computer-assisted data collection
April 2000-December 2001	QA on data processing

XIV.D. DEMOGRAPHIC ANALYSIS

OBJECTIVE

The Census Bureau will use independent estimates to evaluate the completeness of coverage in Census 2000, to ensure the demographic consistency of the census data, and to validate the Accuracy and Coverage Evaluation (A.C.E.) Coverage results.

MAJOR FEATURES

Demographic analysis (DA) represents a macro-level approach to measuring coverage. The demographic approach differs fundamentally from the A.C.E. estimates, which represent a micro-level approach (case-by-case matching).

Demographic estimates of net undercount are derived by comparing census results to estimates based largely on aggregate sets of administrative data. The national estimates for the population below age 65 are derived by the basic demographic accounting equation:

$$\text{Population} = \text{Births} - \text{Deaths} + \text{Immigrants} - \text{Emigrants}$$

Aggregate Medicare data are used to estimate the population 65 years and over. To produce population benchmarks below the national level, the equation is modified to allow for domestic migration. Because administrative records are utilized, the DA estimates are derived independently of the census being evaluated.

Use of Demographic Analysis in Census 2000

Demographic analysis and other independent benchmarks will provide checks at three distinct points in the Census 2000 process. First, independent housing benchmarks will be compared to the Master Address File (MAF) results to evaluate the completeness of our address lists—this began in the fall of 1999, well before Census Day. Second, DA will be compared with preliminary census results as an early quality check and to provide an early assessment of coverage differentials at the national and state levels. In addition, this review can identify content problems and possible anomalies due to geocoding and other nonsampling errors. Finally, the DA estimates will be used to evaluate the demographic consistency of the final census results and validate the coverage measurement results of the A.C.E.

MILESTONES

May 1998	Began implementing features of DA in Dress Rehearsal
September 1999	Began evaluating quality/completeness of MAF
August 2000	Began evaluating quality/completeness of “early” census results
January 2001	Produce DA population estimates for use in evaluating census and A.C.E. results
January 2001	Begin assessment of A.C.E. results using independent benchmarks

XIV.E. EVALUATION PROGRAM

OBJECTIVES

The Census Bureau will obtain information about the quality of Census 2000 data to provide for future census planning.

MAJOR FEATURES

Evaluations of key components of Census 2000 were planned before and implemented during the Census 2000 process. Evaluation results will be released by categories and synthesis topics.

The components of Census 2000 to be evaluated will fall into these broad categories:

- Response Rates and Behavior Analysis
- Content/Data Quality
- Data Products
- Promotion and Partnership
- Special Populations
- Address List Development
- Recruiting and Management
- Field Operations
- Coverage Improvement
- Ethnographic Studies
- Data Capture
- Processing Systems
- Assurance Evaluations
- Accuracy and Coverage Evaluation Survey Operations
- Coverage Evaluations of the Census and of the A.C.E. Survey
- A.C.E. Survey Statistical Design and Estimation
- Organization/Budget and MIS
- Automation

MILESTONES

January 1998	Defined components of Census 2000 Dress Rehearsal Report Card
January 1999	Released Census 2000 Dress Rehearsal Report Card
FY 2000 - 2002	Implement evaluation studies
FY 2001 - 2002	Prepare and issue evaluation reports

December 2000

XIV.F. RESEARCH AND EXPERIMENTATION PROGRAM

OBJECTIVE

The Census Bureau is conducting a program of research and experimentation during the Census 2000 cycle that will provide information for planning the 2010 Census.

MAJOR FEATURES

As part of each decennial census since 1950, the Census Bureau has incorporated a research program to gather data needed to facilitate planning for the next census. For Census 2000, the Census Bureau is conducting experiments and research on decennial census activities to assess alternative methods that may be considered for the 2010 Census. These research activities are being coordinated and managed in a comprehensive research program.

The process for conducting this program involves the following:

- C Develop criteria for selection of research
- C Solicit ideas for research
- C Review proposals and select research based on pre-identified criteria and resources
- C Ensure that implementation of research is coordinated with all participating Census Bureau divisions
- C Monitor budget and schedules for research
- C Review results and coordinate the documentation of results into a Census 2000 results memorandum series

MILESTONES

September 1997	Defined selection criteria for the research and experimentation program
November 1997	Solicited ideas for research and experimentation
March 1998	Identified research and experiments to be included (initial selection)
October 1998-December 2000	Implemented research and experiments
January-May 1999	Identified research and experiments unique to the traditional census design (final selection)
January 2001-September 2003	Document results of research and experiments

December 2000

XIV.G. ADMINISTRATIVE RECORDS RESEARCH

OBJECTIVE

The Census Bureau is exploring the feasibility of using administrative records in future decennial censuses.

MAJOR FEATURES

The Census Bureau is evaluating the feasibility of using administrative records to supplement or improve traditional data collection methods. The Census Bureau included an experiment in Census 2000 in parallel with standard methods. The results provide a basis for analysis and decision making on the expanded use of administrative records in the 2010 census. To support this experimentation, the Census Bureau developed an administrative records system using selected federal records.

Developing an administrative records system for experimentation in Census 2000 involved the following:

- C Identifying and acquiring administrative records files from selected national programs that contribute to coverage and to demographic characteristics
- C Developing methods to evaluate the quality of the administrative records system and the component files
- C Conducting experiments in Census 2000 to support planning for the 2010 census

An administrative records research agenda was established to identify relevant issues and the corresponding research projects that are required. In addition, the Census Bureau is conducting privacy research to gauge public acceptance of administrative records use.

MILESTONES

April 1997	Conducted privacy group meetings on use of administrative records
March 1998	Evaluated 1996 Community Census use of administrative records
October 1998	Generated the Dress Rehearsal administrative records files
March 1999	Evaluated the Dress Rehearsal administrative records files

December 2000

April 1999	Generated the administrative records prototype
July 1999	Evaluated the administrative records prototype
March 2000	Generated the Statistical Administrative Records System
April 2000	Began implementation activities for Census 2000 experiments
February 2001	Complete processing of experiment data
March-December 2001	Prepare and issue experiment results from the four evaluations

XIV.H. 2010 CENSUS PLANNING

OBJECTIVE

The Census Bureau will carry out a long-range planning and design effort for the 2010 census.

STRATEGY FOR 2010

The three interrelated phases of the 2010 Census planning strategy are as follows:

- **EARLY PLANNING** - The 2010 Census process will be re-engineered through Early Planning.
 - The census operational design with outside contractors will be completely re-engineered, including developing external contracts for re-engineering the census computer architecture.
 - Research on the use of administrative records will continue.
 - Usability testing for enhanced technology and improved design for data collection will be performed.
 - Methodologies for collecting special populations, e.g. targeted mailings in multiple languages, will be refined and tested.
 - The software development process will be prepared and upgraded for compliance with quality assurance standards.
- **MASTER ADDRESS FILE/TIGER** The Master Address File (MAF) and the Geographic Data Base (TIGER) will be enhanced through modernization initiatives.
 - The current MAF will be updated with satellite imagery and global positioning technology for correct geospatial positioning of housing units.
 - Web-based systems will be developed to allow state, local, and tribal partners to update addresses.
 - The enhanced MAF will be the key link between the new initiatives and a successful decennial census in 2010.

- **LONG FORM TRANSITIONAL DATABASE** The American Community Survey (ACS) will replace the long form and supply continuous long form data. The Long Form Transitional Database will be essential to the initial planning.
 - The Long Form Transitional Database will provide a smooth transition to implement the American Community Survey (ACS). A sample size of three million will be used rather than the present 31 sites.
 - To ensure scientific integrity is upheld, the MAF/TIGER database will be updated by trained enumerators working on the ACS and other surveys.

BACKGROUND

Planning for the 2010 Census has already begun. Initial planning will take place concurrently with Census 2000 through the year 2003 contingent on the availability of funding.

During 2001, we will continue to collect information about Census 2000 to use for planning the 2010 census. Information gathering will involve internal staff with census experience; external interest; and stakeholder groups. We will develop a set of basic operational requirements and overall 2010 census goals to guide future planning. We will organize and use the information gathered (as it becomes available) to drive specific requirements for several operations, concentrating on those where there are opportunities for major cost savings (such as, field infrastructure and automated systems design). We will continue refinement of the full cycle cost estimate.

During 2002, we will work with contractors or other experts to design systems and tests to meet known operational requirements and census objectives. We will expand (beyond field infrastructure and automation issues) the identification of specific requirements and begin development of cost models, management information systems and schedules, and other planning tools. We will design and implement iterative and simultaneous special purpose tests to develop specific aspects of the census plan.

In 2003, we will continue the development of requirements and management tools, as well as special purpose testing, particularly tests to integrate MAF/TIGER advances into the census process and coverage-related activities. We will also plan the census test for 2004.

MILESTONES

FY 2001	Develop basic operational requirements and overall goals to guide future planning
FY 2002	Design systems, tests, cost models, Management Information Systems (MIS), schedules, and other planning tools
FY 2003	Continue to develop requirements, management tools, and special purpose testing, including tests to integrate MAF/TIGER advances into the census process and coverage-related activities
FY 2004	Conduct major census test

United States
Census
2000

Section XV.
Puerto Rico

XV. PUERTO RICO

OBJECTIVES

Census 2000 operations in Puerto Rico were comparable in scope to stateside activities. The Census Bureau worked in partnership with the government of Puerto Rico--as represented by the Puerto Rico Planning Board (PRPB)--on the program objectives to ensure that Census 2000 data met the legal requirements set forth in Title 13, U.S. Code, as well as the specific needs of Puerto Rico.

MAJOR FEATURES

Census 2000 operations in Puerto Rico were built around the same four fundamental strategies used stateside:

- **Strategy One: Build Partnerships at Every Stage of the Process**
 - The Census Bureau signed a Memorandum of Agreement with the governor of Puerto Rico that outlined the mutual roles and responsibilities of each party in the conduct of Census 2000 on the island.
 - In consultation with the PRPB and its local Interagency Committee, census questionnaire content was developed to meet the legislative and program needs of Puerto Rico.
 - An advertising and promotion campaign designed to build awareness of the census and boost participation was developed for Puerto Rico that would take into account its specific needs.
 - The Census Bureau conducted an address listing operation in Puerto Rico in 1998. This allowed for the full implementation of the 1999 Local Update of Census Addresses (LUCA) program. Address listing also was the basis for the update/leave method of enumeration. During update/leave, field enumerators updated the address list and map and left a census questionnaire at each housing unit for the residents to complete and mail back.
- **Strategy Two: Keep it Simple**
 - Using the findings from our census testing and research, the Census Bureau designed user-friendly questionnaires that were simpler and easier for respondents to understand and complete. Forms were available in both Spanish and English.

- Ⓒ Census questionnaires and other forms were made more readily available to respondents and were placed in Walk-In Questionnaire Assistance Centers and in other locations that were identified through consultation with our local partners.

- **Strategy Three: Use Technology Intelligently**

- Ⓒ Using the update/leave methodology for data collection for the first time in Puerto Rico gave respondents the opportunity to complete the census questionnaires themselves and return them by mail. This allowed the Census Bureau to make use of the same technological advances that were used stateside.
- Ⓒ The Census Bureau made greater use of the telephone as a data collection tool, in addition to its use in providing assistance to respondents with questions about Census 2000.
- Ⓒ Data users will have access to Census 2000 data and products through the Internet, using the American FactFinder system. American FactFinder gives users the flexibility to extract and tabulate census data quickly to meet their specific data needs.

- **Strategy Four: Use Special Techniques to Improve Coverage**

- Ⓒ We automated many operations performed clerically in 1990, so that sources of error in manual operations are avoided.
- Ⓒ Produced the first islandwide computerized address list as a result of the Address List operation. This computerized address list was used for controlling census operations and tabulating the results.
- Ⓒ Expanded the marketing and promotion programs, the Telephone Questionnaire Assistance program, and other enumeration support activities to address lessons learned in the 1990 census.
- Ⓒ Used operations such as coverage improvement followup and Be Counted Telephone Questionnaire Assistance followup which allowed us to focus efforts in areas where the potential for coverage improvement was greatest.

MILESTONES

October 1997	Completed Phase 1 of Block Boundary Definition Program
November 1997	Completed questionnaire content determination process

December 2000

February 1998	Finalized Memorandum of Agreement
September 1998	Began address listing activities
December 1998	Finalized Census 2000 plan for Puerto Rico
May 1999	Conducted LUCA program
March 2000	Conducted update/leave enumeration
January 2001	Release total counts for Puerto Rico
June 2001	Deliver Puerto Rico redistricting counts

December 2000

United States
Census
2000

Section XVI.
Island Areas

XVI. ISLAND AREAS

American Samoa, Commonwealth of the Northern Mariana Islands, Guam, and U.S. Virgin Islands

OBJECTIVES

Census 2000 operations in American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands (collectively referred to as the Island Areas) were conducted by the government of each Island Area in partnership with the Census Bureau. These partnerships were designed to ensure that Census 2000 data meet the legal requirements set forth in Title 13, U.S. Code, as well as the specific needs of each Island Area.

MAJOR FEATURES

Census 2000 operations in the Island Areas were built around three fundamental strategies that also were used stateside:

- **Strategy One: Build Partnerships at Every Stage of the Process**
 - C The Census Bureau developed and signed a Memorandum of Agreement with the governor of each Island Area that outlined the mutual roles and responsibilities of each party in the conduct of Census 2000 for each Island Area.
 - C In consultation with the local Interagency Committee established by each Island Area, the Census Bureau developed the census questionnaire content that meets the legislative and programmatic needs of each Island Area.
 - C An advertising and promotion campaign designed to build awareness of the census and boost participation was developed for each Island Area that took into account its specific needs.
 - C Data collection in the Island Areas used the list/enumerate method. This decision was based on recommendations from Island Area representatives and an analysis of the various data collection methodologies. During a list/enumerate operation, field enumerators list the housing units, show their spatial location on a map, and enumerate the residents. However, unlike the stateside procedures, we delivered Advance Census Reports (ACRs) before the list/enumerate operation and asked respondents to complete the form and hold it for the enumerator to pick up.

- **Strategy Two: Keep it Simple**

- Using the findings from our census testing and research, the Census Bureau designed respondent-friendly questionnaires and forms that were simpler and easier for the enumerators to administer and for the respondents to understand and answer.
- Census questionnaires and forms were made more readily available to respondents and were placed in convenient places.

- **Strategy Three: Use Technology Intelligently**

- The Census Bureau made greater use of the telephone to provide assistance to respondents with questions about Census 2000.
- Data users have access to Census 2000 data and products using the American FactFinder system. The American FactFinder gave users the flexibility to extract and tabulate census data quickly to meet their specific data needs.

MILESTONES

August 1998	Completed questionnaire content determination process
December 1998	Finalized Census 2000 plan for the Island Areas
September 1999	Finalized Memorandum of Agreement for each Island Area
April-May 2000	Conducted list/enumerate for Island Areas
April 2001	Release total counts for each Island Area

United States
Census
2000

Section XVII.

**Appendix -
Glossary
of Abbreviations
and
Acronyms**

XVII. APPENDIX - GLOSSARY OF ABBREVIATIONS AND ACRONYMS

- A.C.E.** (Accuracy and Coverage Evaluation) A coverage measurement method used to determine the number of people and housing units missed or erroneously included in Census 2000. The A.C.E. survey is a nationwide sample survey conducted by the Census Bureau independently of the census. Depending on the decision by the Census Bureau Director, the results could be used to statistically adjust the final census counts for nonapportionment purposes.
- ACF** (Address Control File) The residential address list used in the 1990 census to label questionnaires, control the mail response check-in operation, and determine the nonresponse followup workload.
- AFF** (American FactFinder) A generalized electronic system for access and dissemination of Census Bureau data. The system is available through the Internet and offers prepackaged data products and the ability to build custom products. The system serves as the vehicle for accessing and disseminating data from Census 2000 (as well as the 1997 Economic Censuses and the American Community Survey). The system was formerly known as the Data Access and Dissemination System (DADS).
- AIANA** (American Indian and Alaska Native Area) A Census Bureau term referring to these entity types: American Indian reservation, American Indian subreservation area, American Indian trust land, state designated American Indian statistical area, tribal jurisdictional statistical area, tribal designated statistical area, tribal subdivision, Alaska Native Regional Corporation, Alaska Native Village, and Alaska Native Village statistical area.
- ATM** (Asynchronous Transfer Mode) A process that increases the amount of information that can be electronically transferred at one time between sites.
- CAPI** (Computer Assisted Personal Interviewing) A method of data collection using a laptop computer in which the questions to be asked are displayed on the computer screen and responses are entered directly into the computer.
- CATI** (Computer Assisted Telephone Interviewing) A method of data collection using telephone interviews in which the questions to be asked are displayed on a computer screen and responses are entered directly into the computer.

- CCD** (Census County Division) A subdivision of a county that is a relatively permanent statistical area established cooperatively by the Census Bureau and local government authorities. Used for presenting decennial census statistics in those states that do not have well-defined and stable minor civil divisions that serve as local governments.
- CD-ROM** (Compact Disk-Read Only Memory) An optical disk that is created by a mastering process and used for storing large amounts of data. Unlike standard computer disks and diskettes, CD-ROMs can be used only to read stored data, not to update or change its content.
- CFO** (Census Field Office) One of approximately 402 temporary Census Bureau offices established in Census 2000 to manage address listing field work and conduct local recruiting.
- C&P** (Cost and Progress) A component of the electronic Management Information System that reports daily progress for major operations and periodic costs for field data collection activities.
- DA** (Demographic Analysis) An independent, macro-level approach to evaluate the census and A.C.E. results in Census 2000. Estimates using demographic analysis are derived by comparing aggregate sets of data or counts. Records used for demographic analysis include birth and death records, immigration statistics, estimates of emigration and undocumented migration, and Medicare data.
- DADS** (Data Access and Dissemination System) Now known as the American FactFinder (AFF). (See definition above)
- DANC** (Decennial Applicant Name Check) This automated system is used to screen all applicants' backgrounds for criminal histories to facilitate the selection, hiring, promotion, and payrolling of qualified and suitable applicants for the conduct of Census 2000.
- DCC** (Data Capture Center) One of four decentralized Census Bureau facilities (one permanent, three temporary) that check in Census 2000 questionnaires returned by mail, create images of all questionnaire pages, and convert data to computer readable format using OMR, ICR, and data keying technologies. The DCCs also performs other computer processing activities, including automated questionnaire edits, work flow management, and data storage. Called "processing office" (PO) in previous censuses.

- DCS 2000** (Data Capture System 2000) The data capture system that is used to capture information from census forms. This system incorporates the following activities: processing more than 120 million incoming forms; digitally capturing and processing billions of bits of information on the forms; converting automatically the image of the form to text-based data; and editing/repairing data that the system is unable to decipher automatically.
- DFI** (Decennial Field Interface) The collection of systems that will be used in census field offices, regional census centers, and local census offices to control and manage the census data collection effort. It includes, among others, the operations control, payroll and personnel, map production, and management information systems.
- DSF** (Delivery Sequence File) A computerized file containing all delivery point addresses serviced by the U.S. Postal Service. The U.S. Postal Service updates the DSF continuously as its letter carriers identify addresses for new delivery points or changes in the status of existing addresses.
- GQ** (Group Quarters) A place where people live that is not a housing unit. The Census Bureau classifies all persons not living in housing units as living in group quarters. There are two types of group quarters: institutional (for example, correctional facilities, nursing homes, and mental hospitals) and noninstitutional (for example, college dormitories, ships, hotels, motels, group homes, missions and shelters).
- HH** (Hawaiian Homelands) Areas created as a result of the Hawaiian Homes Commission Act of 1920 to provide agricultural, pastoral and residential land for native Hawaiians.
- HU** (Housing Unit) A house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall. For vacant units, the criteria of separateness and direct access are applied to the intended occupants whenever possible. If that information cannot be obtained, the criteria are applied to the previous occupants.
- LCO** (Local Census Office) A temporary Census Bureau office established for Census 2000 data collection purposes. Called "district office" (DO) in previous censuses.

L/E	(List/enumerate) A method of data collection in which enumerators list each residential address and enumerate the household in one visit.
LHFU	(Large Household Followup) A census operation that follows up on households that indicated on their census form that there are six or more persons in that housing unit.
LUCA	(Local Update of Census Addresses) A Census 2000 program (also known as Address List Review), established in response to requirements of P.L. 103-430, that provides an opportunity for local and tribal governments to review and update individual address information in the MAF and associated geographic information in the TIGER database to improve the completeness and accuracy of both computer files.
MAF	(Master Address File) A computer file based on a combination of the addresses in the 1990 ACF and current versions of the DSF, supplemented by address information provided by state, local, and tribal governments. The MAF was updated throughout the decade to provide a basis for producing address labels needed to deliver Census 2000 questionnaires, keep track of which forms have been returned and which need followup, serve as the sampling frame for the Census Bureau's periodic demographic surveys, and support other Census Bureau statistical programs.
MAS	(Master Activity Schedule) A component of the electronic Management Information System that contains all census activities and provides decision-support functions, such as critical path analysis.
MCD	(Minor Civil Division) A primary government and/or administrative subdivision of a county, such as a township, precinct, or magisterial district.
MO/MB	(Mailout/mailback) A method of data collection in which the U.S. Postal Service delivers addressed questionnaires to residents who are asked to complete and mail back the questionnaire to the appropriate Census Bureau office.
NPC	(National Processing Center) The Census Bureau's permanent data processing facility in Jeffersonville, Indiana.
NRFU	(Nonresponse Followup) A census followup operation in which temporary field staff, known as enumerators, visit or telephone addresses from which no questionnaire was returned by mail, or from which no Internet or telephone response was received.

OCR	(Optical Character Recognition) Software to identify alphabetic and numeric characters contained on the census questionnaires.
OCS 2000	(Operations Control System 2000) Automated system to guide both field canvassing and address capture procedure.
OMR	(Optical Mark Recognition) Technology that uses an optical scanner and computer software to scan a page, recognize the presence of marks in predesignated areas, and assign a value to the mark depending on its specific location on a page.
PAMS/ ADAMS	(Preappointment Management System/Automated Decennial Administrative Management System) An integrated structure of administrative management programs that supports applicant tracking and processing, background checks, selection records, recruiting reports, personnel and payroll processing, and archiving of historical data.
P.L. 94-171	(Public Law 94-171) The public law that requires the Census Bureau to provide selected decennial census data tabulations to the states by April 1 of the year following the census enumeration. These tabulations are used by the states to redefine the areas included in each congressional district and in other districts used for state and local elections, a process called redistricting.
P.L. 103-430	(Public Law 103-430) The public law that amends Title 13, United States Code, to allow designated local and tribal officials access to the address information in the MAF to verify its accuracy and completeness. This law also requires the U.S. Postal Service to provide address information it compiles to the Census Bureau to improve the MAF.
PUMS	(Public Use Microdata Sample) Computerized files containing a small sample of individual long form census records showing the population and housing characteristics of the people included on those forms.
QA	(Quality Assurance) A systematic approach to build quality into a process.
RCC	(Regional Census Center) One of 12 temporary Census Bureau offices established to manage LCO activities and to conduct geographic programs and support operations such as automated map production. The Census Bureau also opened an "Area Office" to manage census operations in Puerto Rico.

RO	(Regional Office) One of 12 permanent Census Bureau offices established in 12 cities throughout the country to implement outreach and promotion activities during the census period and to conduct survey enumeration and other decentralized work of the Census Bureau.
SBE	(Service-Based Enumeration) An operation designed to enumerate people at places where they might receive services, such as shelters, soup kitchens, and other selected locations. This operation was designed to provide an opportunity to be enumerated to people who may be missed in other Census 2000 operations.
SP	(Special Place) A residence where people live or stay other than the usual house, apartment, or mobile home. Examples are colleges and universities, nursing homes, hospitals, prisons, and military bases.
STF	(Summary Tape File) A series of census summary tabulations of complete count and/or sample population and housing data available for public use on electronic media.
TIGER	(Topologically Integrated Geographic Encoding and Referencing) A computer database that contains a digital representation of all census-required map features (streets, roads, rivers, railroads, lakes, and so forth), the related attributes for each, and the geographic identification codes for all entities used by the Census Bureau to tabulate data for the United States, Puerto Rico, and Island Areas. The TIGER database records the interrelationships among these features, attributes, and geographic codes and provides a resource for the production of maps, entity headers for tabulations, and automated assignment of addresses to a geographic location in a process known as "geocoding."
T-NIGHT	(Transient Night) An enumeration procedure conducted to enumerate people occupying campgrounds at racetracks, recreational vehicle (RV) campgrounds or RV parks, commercial or public campgrounds, fairs and carnivals, and marinas.
TQA	(Telephone Questionnaire Assistance) A toll-free service that was provided by a commercial telephone center to answer questions about Census 2000 or the census questionnaire and allow callers to respond directly to the census.
U/L	(Update/Leave) A method of data collection in which enumerators personally deliver a census questionnaire to a household to be completed and returned by mail and at the same time update the address list.

- USPS** (U.S. Postal Service) The organization responsible for delivering the mail questionnaires in Census 2000 and the producer of the DSF.
- WAN** (Wide Area Network) A group of computers linked within a network, such as the Census Bureau's regional offices, to exchange and share information. Whereas a "local area network" may link computers within a building or among several buildings, a WAN covers more area and distance.